

Generations of Middle East doctors: Sana and Kawa Dizaye of Erbil, Iraq, pictured in the same place, 16 years apart.

From the Editor

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This is our sixth issue this year and has a good number of papers from the region. Two papers deal with effects of Gastrointestinal problems on health.

A retrospective study from Jordan was performed to find out the Seroprevalence of HBV, HCV, HIV and syphilis infections among blood donors at Blood Bank of King Hussein medical center and to establish strict guidelines for blood transfusion to reduce the incidence of TTI, thus ensuring safe blood supply to the recipients. The study was carried out in the Blood Bank of King Hussein Medical Center over 3 years from January 2009 through December 2011. A total of 94,270 blood donor records from year 2009 to 2011 at King Hussein Medical Center were apparently healthy adult voluntary and replacement donors. The overall prevalence of HBs Ag, HCVAb, HIV1/2 Ab, RPR and HbC Ab total were 0.8%, 0.15%, 0.02%, 0.006%, 6.4% respectively. The authors concluded that a substantial percentage of the blood donors harbor HIV, HBV, HCV and syphilis infections so the use of sensitive screening test for these TTI and establishment of strict guidelines for blood transfusion are highly recommended to reduce the incidence of them, thus ensuring safe blood supply to the recipients.

A paper from Turkey pointed out that very high levels of C-reactive protein should alert the clinician to the development of acute chest syndrome in sickle cell patients

The authors stressed that acute chest syndrome (ACS) is associated with both inflammation and tissue ischemia. C-reactive protein (CRP) is marker of systemic inflammation. The aim of this study was to determine if a relationship exists between CRP and severe ACS. Forty-three patients with painful crises (range: 4–18 years, mean: 11.4 years)

hospitalized between 2012 and 2014, consisting of 23 patients with ACS and 20 patients without ACS (uncomplicated vaso-occlusive crisis) were recruited into this study. The authors concluded that Elevated CRP was determined in all ACS patients with SCD. CRP may be a superior diagnostic marker and herald severe ACS in individuals with SCD.

A paper from Sri Lanka was conducted to explore patients' attitudes towards training students in fee levying general practices. Six general practices to represent different practices (urban, semi urban, male and female trainers) where students undergo training were selected for the study. Randomly selected 50 adult patients from each practice responded to a self administered questionnaire following a consultation where medical students had been present. 300 patients (57.2 % females) participated in the study. The authors concluded that the vast majority of the patients accepted the presence of students and were willing to participate in this education process without any reservation. Their wishes should be respected. Outcome of this study is an encouragement to educationists and GP teachers.

A descriptive cross sectional study from Baghdad carried out in the gastrointestinal and hepatology teaching hospital, Baghdad Medical City during 2013 on data collected from reviewing patient's files from the 1st of January to 31st of December 2012 including all adults 18 years and above of both sexes with dyspeptic symptoms who were referred for endoscopic evaluation of Helicobacter Pylori infection by taking multiple antral biopsies for histopathological stain and evaluation of their endoscopic findings. The aim is to demonstrate the prevalence of Helicobacter Pylori infection in adult patients with dyspepsia who underwent upper Oesophago-Gastro-Duodenoscopy so early treatment can be made to prevent it's complications, and to estimate the prevalence of positive endoscopic findings in patients with dyspepsia.

Chronic idiopathic urticarial patients may benefit from eradication therapy of H. pylori.

A paper from Saudi Arabia looked at the prevalence of Helicobacter pylori in the serum of patients who presented with chronic urticaria. The patient has endured treatment and is not cured besides partial treatment causes temporary relieve of symptoms. So, it is important to make the right decisions regarding the treatment of

chronic urticaria by adding triple therapy for those who are H.pylori positive.

In an interview with Ben Frank the CEO of Sheikh Khalifa Medical City he discussed the changes in hospital management and its impact on the Health Care Delivery System. He stressed that the Gulf Corporate Council (GCC) member states (JAE, Saudi Arabia, Qatar, Bahrain and Qatar) have been witnessing a tremendous increase in the demand for healthcare services and professionals especially at a time when markets across the globe are still recouping from the financial crisis. One influential reason for the skyrocketing healthcare jobs is that the industry is collectively upgrading its facilities and expertise to world-class standards (Saad, 2012). In fact, some standards actually surpass the levels of their European and American counterparts such as Saudi German Hospital-Dubai (Saad, 2012). A study done by Alpen Capital Investment (2014) state that "The GCC healthcare market is projected to grow at an annual rate of 12% to US\$ 69.4 billion by 2018 from an estimated US\$ 39.4 billion in 2013." Saudi Arabia is projected to remain the largest GCC market while Qatar and UAE are expected to be the fastest growing markets. (Alpen Capital Investment Banking, 2014)

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Very high levels of C-reactive protein should alert the clinician to the development of acute chest syndrome in sickle cell patients

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Abstract

Purpose: Acute chest syndrome (ACS) is associated with both inflammation and tissue ischemia. C-reactive protein (CRP) is a marker of systemic inflammation. The aim of this study was to determine if a relationship exists between CRP and severe ACS.

Methods: Forty-three patients with painful crises (range: 4-18 years, mean: 11.4 years) hospitalized between 2012 and 2014, consisting of 23 patients with ACS and 20 patients without ACS (uncomplicated vaso-occlusive crisis) were recruited into this study. Retrospective data were obtained directly from inpatient

medical records. ACS was defined as a new pulmonary infiltrate on chest radiograph after admission and before discharge. CRP was measured using a BN II Nephelometer.

Results: Mean length of hospital stay of ACS patients was 9.9 days (range 7-18 days) while that of patients without ACS was 5.2 days (range 2-10 days), ($p=0.001$). In 91% of the ACS cases, ACS developed within the first 72 hours, while the remaining 9% cases were admitted for vaso-occlusive crises but subsequently developed ACS during their hospital stay on the 5th to 7th days. CRP levels on admission were significantly higher in patients with ACS than those without ACS ($p=0.001$).

Conclusion: We investigated CRP in relation to ACS in children with sickle cell disease (SCD). Elevated CRP was determined in all ACS patients with SCD. CRP may be a superior diagnostic marker and herald severe ACS in individuals with SCD.

Key words: Sickle cell diseases, Acute chest syndrome, C-reactive protein

Introduction

Acute chest syndrome (ACS) is a frequent complication of sickle cell disease (SCD). ACS represents grounds for hospital admission and is the most common cause of death in patients with SCD. ACS is defined as a new pulmonary infiltrate and some combination of fever, chest pain and signs and symptoms of pulmonary diseases, such as tachypnea, cough and dyspnea (1-3).

There are many causes of ACS, and the pathogenesis is complex and not thoroughly understood. The trigger for ACS in an individual patient generally cannot be identified. Although infection is the most common identifiable cause of ACS, there are other important triggers including vaso-occlusive crisis (VOC), rib infarction, bone marrow infarction, fat embolism and asthma. The presenting signs and symptoms of ACS can be highly variable and affected individuals may have a normal initial physical examination. ACS often develops in the setting of a vaso-occlusive episode or with other acute manifestations of SCD, frequently after two to three days of severe vaso-occlusive pain. ACS can progress rapidly (over several hours to days) to requiring intubation and mechanical ventilatory support (3-5).

Acute phase proteins such as C-reactive protein (CRP) are well recognized for their applications in human diagnostic medicine and are reported to be valuable in the diagnosis and prognosis of cardiovascular disease, SCD, autoimmunity, organ transplant, and cancer treatment. CRP can be used together with signs and symptoms and other tests to evaluate an individual for acute or chronic inflammatory conditions. Previous studies have reported a strong association between increased CRP levels and VOC. The elevated CRP in SCD may be in response to endothelial damage due to the blockage of the vascular endothelium by sickled erythrocytes (6,7).

As the sickle cell painful crisis is associated with both inflammation and tissue ischemia, we hypothesized that serum CRP levels may rise during and in association with severe ACS. The aim of this study was to evaluate CRP levels in children with SCD in ACS and during VOC.

Methods

We retrospectively reviewed the medical records of patients under 18 years and admitted for VOC between 2012 and 2014. Patients' data were obtained directly from inpatient medical records and from the hospital-based computer system accessed by the same physician. Data collected included demographic information such as gender and date of birth. Other variables included dates of admission and discharge. Medical charts for all patients were reviewed for data concerning the chief complaint, respiratory symptoms, fever, peripheral blood white blood cell (WBC) count, biochemical tests (blood urea nitrogen (BUN), creatinine and CRP), chest radiograph and chest computed tomography (CT) reports, receipt of blood transfusion and erythrocytapheresis, painful time, admission to hospital, duration of hospitalization, discharge diagnosis, mortality and complications during

the study. The final discharge diagnosis of ACS was defined as a new pulmonary infiltrate on chest radiograph after admission and before discharge. ACS was recorded according to the current criteria: new infiltrate visible at chest X-ray (involving at least one complete lung segment consistent with the presence of alveolar consolidation) associated with one or more symptoms, such as fever, cough, tachypnea, breathing difficulties or new-onset hypoxia (8).

Blood samples were obtained during visits to the outpatient clinic or at presentation to the emergency department for a painful crisis. Standard blood counts were performed in EDTA-anti-coagulated blood (Sysmex XT- 2000i, USA). Biochemical investigation was performed with a Modular Analytics P800 analyzer (Roche Diagnostics, Indianapolis, IN) using spectrophotometric methods. We measured the inflammatory biomarker CRP in all patients using a BN II Nephelometer. Serum CRP values were considered normal between 0 and 5 mg/dl. Patients were divided into two groups, with ACS and without ACS. Patients without ACS were selected from the VOC group without complications.

Statistical Analysis

Statistical analysis was performed on SPSS for Windows version 15 (SPSS Inc., Chicago, IL, USA). Numerical data were expressed as mean±standard deviation (SD), mean, maximum and minimum. For data analysis, patients were divided into two groups, with ACS and without. The Mann-Whitney U-test and chi-square test were used for comparison between the two groups. The chi-square test was used to evaluate qualitative variables, while the Mann-Whitney U-test was used to examine relations between non-parametric data. $p < 0.05$ was considered significant.

(Results - next 2 pages)

Discussion

Serum CRP levels in patients with ACS were comparable to those in patients without, but increased significantly during the disease. ACS has a multifactorial etiology, including a variety of inciting events that trigger deoxygenation of HbS, leading to its polymerization and to red blood cell sickling with subsequent vaso-occlusion, ischemia, and endothelial dysfunction (9,10). Heightened proinflammatory cytokine production has been reported in individuals with SCA during VOC (7). Elevated levels of CRP, a general marker of inflammation, have previously been reported in ACS patients with SCD (11-14).

Previous studies from our institution have shown that serum CRP levels increase markedly in SCD patients with ACS and that sequential measurements of CRP are useful in predicting the subsequent development of ACS in patients hospitalized for VOC (11-14). This study confirms the earlier findings of increased CRP levels in patients with ACS. In contrast to other studies, CRP levels in our ACS group were significantly higher than those in

Table 1: Demographic and clinical characteristics of children with SCD admitted due to an initial painful episode over a 2-year period

Parameter	ACS n= 23	no ACS n=20	p-value**
Demographic characteristics			
Mean age (range in years)	10.4 (4–18)	12.6 (4–18)	0.63
Gender (male, %)	11 (48%)	8 (40%)	0.60
Co-morbidities (n,%)			
Asthma	0	0	1
Stroke	1(4%)	0	0.35
Hydroxyurea	6 (26%)	3 (15%)	0.37
Clinical characteristics (n,%)			
Asthma symptoms	12 (52%)	0	0.001*
Hypoxia	3 (13%)	0	0.94
Fever	23 (100%)	11 (55%)	0.001*
Cold	12 (52%)	0	0.001*
Cough	14 (61%)	0	0.001*
Simple transfusion	19 (83%)	4 (20%)	0.001*
Exchange transfusion	3 (13%)	0	0.94
Length of hospital stay (day, range)	9.9 (7-18)	5.2 (2-10)	0.001*
Duration of pain (day, range)	5.2 (3–10)	4.5 (2-7)	0.66

*Statistically significant at $p < 0.05$. ACS: Acute chest syndrome.

**p-values were calculated using the chi-square and Mann-Whitney U tests.

Figure 1: (page 7) >>
Chest X-ray and chest computed tomography (CT) image. At admission, chest X-ray revealed normal. (B) Within 48 hours, chest X-ray showed development of a new bilateral pulmonary infiltrate. Axial view of chest CT using mediastinal (C) and parenchymal (D) windows showed extensive bilateral pulmonary infiltrates and lobar consolidation (involvement of bilateral lung).

Table 2: Hematological and biochemical parameters of patients with or without ACS

Parameter	ACS	no ACS	p-value**
	n=23	n=20	
Hematological			
White blood cell count (/mm ³)	21313±9536	16344±6344	0.93
Erythrocyte count (x 10 ⁵ /mm ³)	2.79±0.69	3.29±0.75	0.033*
Hemoglobin (gr/dl)	7.66±1.50	9.22±1.30	0.003*
Hematocrit (%)	22.05±4.08	25.95±3.31	0.004*
Platelet count (x 10 ³ /L)	390±168	455±195	0.47
Biochemical			
BUN (mg/dl)	8.55±2.72	8.00±2.56	0.63
Creatinine (mg/dl)	0.31±0.09	0.33±0.09	0.79
Albumin (g/dl)	4.28±0.57	4.78±0.29	0.002*
CRP (mg/dl)	94.77±52.71	43.74±50.14	0.001*

Data are arithmetical means ± SD. * Statistically significant at p < 0.05. ACS: Acute chest syndrome, BUN; blood urea nitrogen, CRP; C-reactive protein. **p-values were calculated using the Mann-Whitney U test.

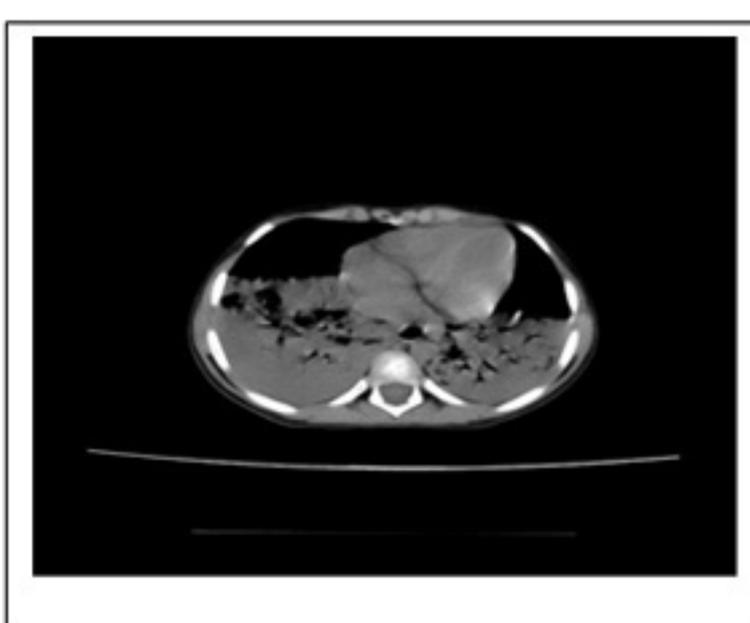
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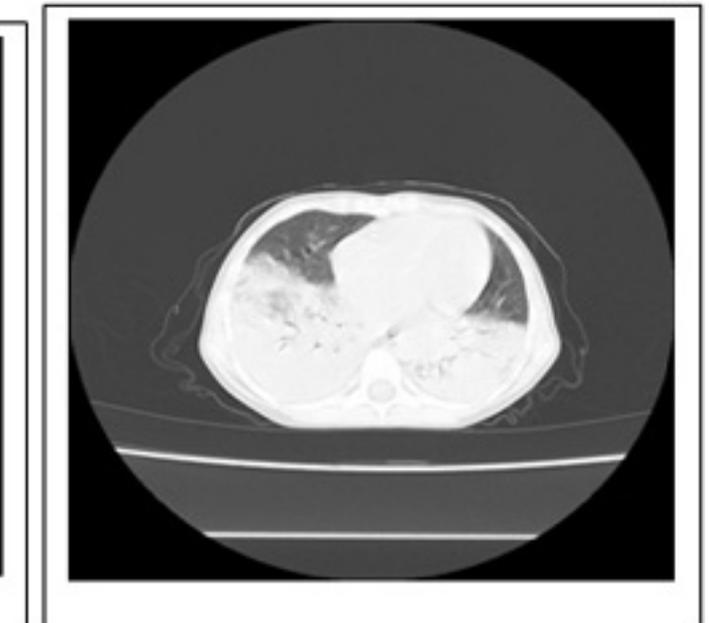
B



C



D



the non-ACS group. Patients with SCD and elevated CRP levels must be closely monitored for development of ACS. Chest pain was present in 15 of the 23 patients with ACS at time of presentation and back pain in 8. One patient with chest pain developed intense abdominal pain in the right upper quadrant on the 2nd day of hospitalization. Consolidation and effusion was determined in the right lower lobe at abdominal USG and chest X-ray.

Diagnosis of ACS can be difficult at times and depends on the experience of the physician. The clinical symptoms described above should alert the physician to the possibility of ACS. Physical examination may reveal tachypnea, dyspnea, hypoxia, decreased air entry, wheezes, and rales. Physical examination alone can, at times, be unreliable in the diagnosis of ACS, and up to 60% of cases are missed by clinicians without radiological confirmation. Additionally, because pain crises often herald ACS, a chest radiograph may be indicated in patients hospitalized for pain, particularly when they develop fever and/or respiratory symptoms. It should be noted, though, that lung infiltrates may not appear in radiographs before 48 to 72 hours after onset of clinical symptoms (9). Vichinsky et al. (15) described the development of ACS within a mean 2.5 days after admission for pain. This parallels an earlier report by Bellet et al. (16) which determined abnormal chest X-ray 2.4 days after admission for pain. In agreement with previous studies, ACS developed within the first 72 hours in 21 of the 23 patients with ACS in our study. Chest X-rays were performed on all patients with clinical systems involving the respiratory system and widespread lobar consolidation was observed in all. Chest CT was performed on all patients in terms of effusion and complications. In agreement with Abbas et al.'s study (9), pulmonary infiltrates were determined on radiographs within the first 72 hours after onset of clinical symptoms in 91% of patients. Morris et al. (17) also reported the unreliability of physical examination in the detection of ACS in febrile patients with SCD: 61% of ACS cases were not clinically suspected by physicians prior to radiological diagnosis. Radiographs should therefore be taken of all patients with fever, chest pain and respiratory system symptoms for the detection of ACS.

Elevation in white cell count and decreased hemoglobin levels have been associated with developing acute pulmonary complication (4). Similarly in our study, lower hemoglobin levels were determined in patients with ACS. Although white cell count was higher in the ACS group the difference was not significant. In terms of biochemical tests, Albumin values were significantly lower in the ACS group. Hypo-albuminemia is a marker of disease severity and is associated with poor clinical outcome in acutely ill children. The decrease in plasma albumin during the acute phase response is probably due to diminished hepatic synthesis and the diversion of protein production required for host defense (14). In the largest series of its kind, Vichinsky et al. (18) evaluated 671 episodes of ACS in 538 patients to identify possible etiological factors. They reported no identifiable cause in 45.7% of cases,

while infection was documented in 29.4% of cases, infarction in 16.1%, and fat embolization in 8.8% (18). We found no identifiable cause associated with ACS. All patients with ACS were hospitalized and given intravenous antibiotics, bronchodilators and analgesia. The management of ACS is primarily supportive and includes respiratory therapy, antibiotics, and, often, erythrocyte transfusion (9,19). Routine, early transfusions are indicated for patients at high risk for complications. Those who present with severe anemia, and multilobar pneumonia should receive transfusion before respiratory distress develops. In most patients with anemia, treatment with leukocyte-depleted, matched, simple transfusions is safe and effective (18). Transfusion therapy improves oxygenation within 12 to 24 hours of erythrocyte transfusion administration. In one large epidemiological study of ACS, management with transfusion was associated with a shorter length of hospitalization. Exchange transfusion is typically reserved for patients who are not sufficiently anemic to accommodate a simple transfusion or those with progressive respiratory decline or persistent hypoxia despite simple transfusion (19). In this study, exchange transfusion was performed on 3 patients due to respiratory difficulty and hypoxia findings, and a dramatic improvement was observed. Simple transfusion was performed on 19 of the 23 patients with ACS. All patients improved with intravenous antibiotics, bronchodilators, analgesia and transfusion therapies.

Conclusion

In conclusion, patients with SCD have high basal CRP and may develop ACS during VOC. Elevated CRP may herald severe ACS and be significantly related to risk factors for ACS. Additionally, CRP may be a good prognostic marker in patients with SCD and ACS. Overall, these results suggest that further studies are needed to determine whether CRP can predict the development of ACS in patients with VOC.

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Seroprevalence of HBV, HCV, HIV and syphilis infections among blood donors at Blood Bank of King Hussein Medical Center: A 3 Year Study

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Abstract

Objective: This retrospective study was performed to find out the Seroprevalence of HBV, HCV, HIV and syphilis infections among blood donors at Blood Bank of King Hussein medical center and to establish strict guidelines for blood transfusion to reduce the incidence of TTI, thus ensuring safe blood supply to the recipients.

Method: The present study was carried out in Blood Bank of King Hussein Medical Center over 3 years from January 2009 through to December 2011. We determined among voluntary and replacement blood donors at Princess Iman Center for research and laboratory medicine, the seroprevalence of human immunodeficiency virus (HIV), hepatitis C virus (HCV), hepatitis B virus (HBs Ag, HBc Ab) and syphilis. Sera of all donors were tested using commercial kits relying on enzyme linked Immunosorbent assay. Qualitative detection of HBs Ag was carried out using (Bioelisa). Each donor's serum sample was screened for HIV-1 and HIV-2 Ab using Biorad (GenscreenHIV1/2 version2), and HCV Ab screening is carried out using Murex anti HCV version 4 following the

manufacturer's instructions. For in vitro diagnostic use the IMMULITE 2000 systems analyzers for the qualitative detection of total antibodies against hepatitis B core antigen (HBc Ab-total) in human serum was used. Screening for Syphilis was carried out using RPR (Rapid plasma regains) confirmed by TPHA (Treponema pallidum hemagglutination). Tests were performed according to the manufacturer's instructions.

Results: A total of 94,270 blood donor records from year 2009 to 2011 at King Hussein Medical Center were apparently healthy adult voluntary and replacement donors. Voluntary donors represent 30% of the total donors while replacement donors represent 70%. Total number of 94,270 blood donors from year 2009 to 2011 at King Hussein Medical Center were screened for HBs Ag, HCV Ab, HIV1/2 Ab, HBc Ab total and RPR at Princess Iman Center for research and laboratory medicine.

In 2009 a total number of 28,315 were screened for TTI and show 245(0.86%) were positive for HBs Ag, 44(0.15%) were positive for HCV Ab, 13 (0.05%) were positive for HIV1/2 Ab, 6(0.02%) were positive for RPR, 1861 (6.57%) were positive for HBc Ab total.

In 2010 a total number of 31,543 were screened for TTI and show 293(0.92%) were positive for HBs Ag, 57(0.18%) were positive for HCV Ab, 4 (0.012%) were positive for HIV1/2 Ab, zero % were positive for RPR, and 2,305 (7.3%) were positive for HBc Ab total.

In 2011 a total number of 34,412 were screened for TTI and show 227(0.66%) were positive for HBs Ag, 44(0.13%) were positive for HCV Ab, 2 (0.006%) were positive for HIV1/2 Ab, zero % were positive for RPR, and 1,908 (5.5%) were positive for HBc Ab total.

The overall prevalence of HBs Ag, HCVAb, HIV1/2 Ab, RPR and HBc Ab total were 0.8%, 0.15%, 0.02%, 0.006%, and 6.4% respectively.

Conclusion: This study shows that a substantial percentage of the blood donors harbor HIV, HBV, HCV and syphilis infections so the use of sensitive screening test for these TTI and establishment of strict guidelines for blood transfusion are highly recommended to reduce the incidence of them, thus ensuring safe blood supply to the recipients.

Key words: Transfusion transmitted infection, Human immunodeficiency virus, Hepatitis B virus, Hepatitis C virus, Syphilis

Introduction

Blood transfusion services (BTS) is an essential part of the health care system; it ensures adequacy, efficiency and safety of blood supply. (1)

Blood transfusion is a life saving procedure which carries a major risk. Transfusion of Blood is associated with many complications, some of which are minor while others are life threatening that need more proper pretransfusion testing and screening.

To improve blood transfusion safety, The World Health Organization (WHO) recommends an incorporated protocol that includes establishing a well-organized blood transfusion service, giving the priority of blood donation from voluntary unpaid donors, screening of donated blood for the major transfusion-transmissible infections (TTI) with quality-assured assays, and applying effective quality control systems. (2)

There is a 1% chance of transfusion associated complications including transfusion transmitted infections (TTI) with every unit of blood transfused. (3)

The major concern of blood transfusion transmitted infections is Human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV) because they can cause life-threatening disorders. (4)

Syphilis is also a systemic disease caused by *Treponema pallidum*. Transfusion transmitted infections are a major concern to patients and physicians who wish for a safe blood supply. Proper selection of blood donors with low TTI risk and efficient laboratory screening play a critical role in reducing the risk of TTI in the last 20 years. (5, 6)

The aim of the present study was to find out prevalence of transfusion transmitted infections (TTI) in voluntary and replacement donors in our hospital transfusion service set up. This study also aids in evaluating the safety of the collected donations.

Materials and Methods

The present study was carried out in Blood Bank of King Hussein Medical Center over 3 years from January 2009 through to December 2011. We determined among blood donors at Princess Iman Center for research and laboratory medicine the seroprevalence of human immunodeficiency virus (HIV), hepatitis C virus (HCV), hepatitis B virus and syphilis.

Sera of all donors were tested using commercial kits relying on enzyme linked Immunosorbent assay for HBV, HCV and HIV, and using RPR for syphilis.

Qualitative detection of HBs Ag was carried out using (Bioelisa). Each donor's serum sample was screened for HIV-1 and HIV-2 Ab using Biorad (Genscreen HIV1/2 version2), and HCV Ab screening is carried out using Murex anti HCV version 4 following the manufacturer's instructions.

For in vitro diagnostic use the IMMULITE 2000 systems analyzers for the qualitative detection of total antibodies against hepatitis B core antigen (HBc Ab-total) in human serum was used. IMMULITE Anti-HBc Ag controls are assayed, tri-level controls intended for use with the immulite 2000 Anti-HBc Ag assays. Negative control: containing human serum non reactive to HBc Ag, low positive control and positive control containing human serum reactive to HBc Ag.

Screening for Syphilis is carried out using RPR (Rapid plasma regains) confirmed by TPHA (*Treponema pallidum* hemagglutination). Tests were performed according to the manufacturer's instructions. All the reactive samples were repeated in duplicate before labeling them seropositive. The donated blood was discarded whenever the donor sample was found positive for any TTI.

Results

A total of 94,270 blood donor records from year 2009 to 2011 at King Hussein Medical Center were apparently healthy adults 30% voluntary (motivated blood donor, who donates at regular intervals) and 70% replacement (usually one time blood donor only when a relative is in need of blood). Blood donors who were included in the study were healthy men and non-pregnant non lactating women between 18 and 69 years, with hemoglobin levels above 13.5 g/dl for males and 12.5 g/dl for females and weighing > 50 kg. Exclusion criteria included: those with a history of jaundice, serious illness, operation, radiotherapy or any form of cancer therapy, current history of medication, blood transfusion. The largest proportion of donors (39%) were in the age ranging from 35-50 years as shown in Table 1 (next page). 87% of donors were males while 13% were females.

As shown in Table 2 and Table 3, a total number of 94,270 blood donors from year 2009 to 2011 at King Hussein Medical Center were screened for HBs Ag, HCV Ab, HIV1/2 Ab, RPR and HBc Ab total at Princess Iman Center for research and laboratory medicine.

In 2009 a total number of 28,315 were screened for TTI and show 245(0.86%) were positive for HBs Ag, 44(0.15%) were positive for HCV Ab, 13 (0.05%) were positive for HIV1/2 Ab, 6(0.02%) were positive for RPR, and 1,861 (6.57%) were positive for HBc Ab total.

In 2010 a total number of 31,543 were screened for TTI and show 293(0.92%) were positive for HBs Ag, 57(0.18%) were positive for HCV Ab, 4 (0.012%) were positive for HIV1/2 Ab, zero % positive for RPR, and 2,305 (7.3%) were positive for HBc Ab total.

In 2011 a total number of 34,412 were screened for TTI and show 227(0.66%) were positive for HBs Ag, 44(0.13%) were positive for HCV Ab, 2 (0.006%) were positive for HIV1/2 Ab, zero % positive for RPR, and 1,908 (5.5%) were positive for HBc Ab total.

Table 1: Age distribution for blood donors

Age range (years)	(18-24)	(25-34)	(35-50)	(51-69)
Donors percentage	16%	36%	39%	9%

Table 2: TTI among blood donors (2009-2011)

Year	Total number of donors	HBs Ag positive	HCV Ab Positive	HIV1/2 Ab Positive	RPR positive	HBc Ab total positive
2009	28315	245	44	13	6	1861
2010	31543	293	57	4		2305
2011	34412	227	44	2		1908

Table 3: Prevalence of TTI among blood donors (2009-2011)

Year	HBs Ag	HCV Ab	HIV1/2 Ab	RPR	HBc Ab total
2009	0.86%	0.15%	0.05%	0.02%	6.57%
2010	0.92%	0.18%	0.012%	0	7.3%
2011	0.66%	0.13%	0.006%	0	5.5%

As shown in Table 4 the overall prevalence of HBs Ag, HCVAb, HIV1/2 Ab, RPR and HBc Ab total were 0.8%, 0.15%, 0.02%, 0.006%, and 6.4% respectively.

Table 4: Overall prevalence of TTI over 3 years' study

TTI	HBs Ag	HCV Ab	HIV1/2 Ab	RPR	HBc Ab total
Prevalence	0.8%	0.15%	0.02%	0.006%	6.4%

All the blood units with positive results for HBs Ag, HCVAb, HIV1/2 Ab, RPR and HBc Ab total were discarded.

Discussion

Hepatitis B surface Antigen (HBs Ag) is the most common method used to detect hepatitis B infection, but using this marker alone in diagnosis of hepatitis B infection is not efficient because it is not detected during the window phase, so other markers of HBV infection are used. This will prevent the risk of transmitting hepatitis B infection.

Anti-HB core total is the marker that is used as a screening test for hepatitis B virus infection in the window phase. This test detects the presence of both IgM and IgG antibody to hepatitis B core antigen. This marker appears at the onset of symptoms and persists for life.

As the results in Tables 1 and 2 show that the prevalence of HB c Ab total positive results is much higher than that of HBs Ag positive results, so the number of blood units that were deferred depending on this result is high.

Donated blood should be screened for HCV using HCV Ab that can detect more than 95% of chronic infection but can detect only 50-70% of acute infection. As shown in Table 4 the overall prevalence of HCV Ab was 0.15%.

The Acquired Immunodeficiency Syndrome (AIDS) is caused by human immunodeficiency viruses, HIV-1 and HIV-2. Infection by HIV-1 has a worldwide distribution while HIV-2 infection occurs mainly in West Africa and Europe (7). It is necessary for screening purposes to use antigens from the envelope glycoproteins of both viruses, because they are less cross reactive in addition to the major cross reactive core proteins, to ensure detection of antibodies against both types of virus at all stages following infection (8).

The first specific antibody response for HIV infection may be of immunoglobulin M (IgM) then immunoglobulin G (IgG) (9). Maximum sensitivity for detection of anti-HIV seroconversion is achieved by assays to both IgM and IgG.

RPR is a rapid screening test for syphilis; all positive results should be confirmed and the reactive blood units should be deferred.

The blood units found positive for HBs Ag, HBc AB, HCV Ab, HIV1/2 Ab and syphilis were discarded and those donors were contacted via their phone numbers included in the health questionnaire; this is the approved policy for donor notification in our center.

Conclusion

This study shows that a substantial percentage of the blood donors harbor HIV, HBV, HCV and syphilis infections so the use of sensitive screening test for these TTI and establishment of strict guidelines for blood transfusion are highly recommended to reduce the incidence of TTI, thus ensuring safe blood supply to the recipients.

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Prevalence of Helicobacter Pylori Infection in Adult Patients with Dyspepsia in Gastrointestinal and Hepatology Teaching Hospital, Baghdad 2012

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Abstract

Background: Dyspepsia is a common symptom with an extensive differential diagnosis and a heterogeneous pathophysiology. Helicobacter pylori infection may be an etiological factor in some patients. The infection is chronic and common throughout the world, with a higher prevalence in developing than in developed countries.

Objectives: To demonstrate the prevalence of Helicobacter Pylori infection in adult patients with dyspepsia who underwent upper Oesophago-Gastro-Duodenoscopy so early treatment can be made to prevent it's complications, and to estimate the prevalence of positive endoscopic findings in patients with dyspepsia.

Patients and methods: This is a descriptive cross sectional study carried out in the gastro-intestinal and hepatology teaching hospital, Baghdad Medical City during 2013 on data collected from reviewing patient's files from the 1st of January to 31st of December 2012 including all adults 18 years and above of both sexes with dyspeptic symptoms who were referred for endoscopic evaluation of Helicobacter Pylori infection by taking multiple antral biopsies for histopathological stain and evaluation of their endoscopic findings.

Key words: helicobacter pylori, adult patients, dyspepsia, Baghdad

Introduction

Dyspepsia is a common symptom with an extensive differential diagnosis and a heterogeneous pathophysiology. It occurs in approximately 25 percent (range 13 to 40 percent) of the population each year, but most affected people do not seek medical care. [1]

Dyspepsia is often broadly defined as pain or discomfort centered in the upper abdomen and may include multiple and varying symptoms such as epigastric pain, postprandial fullness, early satiation (also called early satiety), anorexia, belching, nausea and vomiting, upper abdominal bloating, and even heartburn and regurgitation. Patients with dyspepsia commonly report several of these symptoms.[2]

The pathophysiology of functional dyspepsia is poorly understood. However, researches have focused on abnormal gastric motor function, increased visceral sensitivity, psychosocial factors and recently, *Helicobacter pylori* (*H. pylori*) infection of the stomach. [3] *H. pylori* infection is chronic and common throughout the world, with a higher prevalence in developing than in developed countries [4].

It has been reported that 20% to 60% of patients with functional dyspepsia have evidence of *H. pylori* gastritis and that eradication of the organism results in symptomatic benefit in a small number (10%) of these patients. Therefore, patients younger than 55 years who have new-onset dyspepsia without alarm features should undergo *H. pylori* testing and treatment if infection is confirmed. [5]

H. pylori infection can be diagnosed by non-invasive methods or by endoscopic biopsy of the gastric mucosa. The non-invasive methods include the urea breath test, serologic tests and stool antigen assays. Histology of endoscopically taken biopsy has a very high sensitivity and specificity of 96% and 98.8% respectively, even though it requires expertise for interpretation. [6]

Although there are several reports on the correlation between *H. pylori* infection and clinical outcomes, the results remain unclear and show discrepancies. [7] This study therefore determined to investigate *H. pylori* infection and its relation with dyspepsia.

Aim of Study

1. To estimate the prevalence of *H. Pylori* infection in adult patients with dyspepsia who underwent upper Oesophago-Gastro-Duodenoscopy (OGD) by histopathological stain so early treatment can be made to prevent its complications.
2. To estimate the prevalence of positive endoscopic findings in patients with dyspepsia.

Patients and Methods

Study Design: This is a descriptive cross sectional study carried out in the GIT and hepatology teaching hospital, Baghdad-Medical City during 2013 on data collected from reviewing patient's files from the 1st of January to 31st of December 2012.

Inclusion criteria: Any patient more than 18 years old of both sexes who presented to the GIT hospital during the year 2012 with any of the dyspeptic symptoms and was diagnosed as having dyspepsia according to Rome III and admitted for endoscopic evaluation of *H. Pylori* infection by taking multiple gastric biopsies for histopathological stain and evaluation of their endoscopic findings was included.

Exclusion criteria: None of the patients selected were on antibiotic treatment for the last 4 weeks before endoscopy, and none was on NSAID's or PPI or steroids therapy, and none of them had hematemesis or melena at presentation.

Data collection: Data was collected from patients file information in regard to patient's name, age, gender, residency and presenting symptoms (postprandial fullness, early satiation, epigastric pain, epigastric burning, bloating, nausea, vomiting and belching), endoscopic findings and histopathological stain results for *H. Pylori*. Data was collected during a three months period from the 1st of January to 31st of March 2013, on a basis of one day per week. Endoscopy: Upper gastroendoscopy by video-endoscope was performed on each patient for the evaluation of gastro-duodenal changes and biopsy collection. Patients were fasted overnight. The esophagus, stomach and duodenum were all visualized and mucosal findings on endoscopy were noticed. Three antral biopsies were obtained for histology.

Histology: Biopsies were placed in 10% formalin and then processed for histological examination. Sections were stained with Hematoxylin and Eosin stain (H & E stain) and examined by an experienced histopathologist.

Limitations of the study:

The main limitations found for this study were:

1. This is a cross sectional study so temporal relationship between cause-effect cannot be determined.
2. Shortage of information available on the patients in the hospital records.

Statistical Analysis

Data of all patients were checked for any errors or inconsistency then transferred into computerized statistical software; Statistical Package for Social Sciences (SPSS) version 17 was used in all statistical analysis and procedures. The student t test was used to find the significance of differences in mean age in patients with and without *H. Pylori* infection. Chi square (X^2) was used to find the significance of differences in mean age

in patients with and without *H. Pylori* infection. Chi square (X^2) was used to find the significance of differences in the distribution of *H. Pylori* infection among patients according to different variables in the study and to assess the significance of the relation between *H. Pylori* infection and these variables. Fisher's exact test was used alternatively when the chi square was inapplicable. The level of significance was set at P-value ≤ 0.05 to be considered as a statistically significant difference.

Results

H. Pylori infection was detected in 164 (82%) patients versus 36 (18%) patients who were free of *H. Pylori* infection.

The relation of *H. Pylori* infection with age from different aspects of view: There was a statistically significant relation between age and the prevalence of *H. Pylori* infection, (P-value =0.001); the infection was more prevalent among patients with age (28 - 37) years followed by those aged ≤ 27 years. None of those aged ≥ 78 years had positive *H. Pylori* infection, (Table 1).

Age (years)	<i>H. Pylori</i>				Total		Statistical test and P. value
	Positive		Negative		N	%	
	N	%	N	%			
≤ 27	43	87.8%	6	12.2%	49	100%	$X^2 = 23$ P-value= 0.001
28 – 37	32	88.9%	4	11.1%	36	100%	
38 – 47	38	82.6%	8	17.4%	46	100%	
48 – 57	24	85.7%	4	14.3%	28	100%	
58 – 67	20	71.4%	8	28.6%	28	100%	
68 – 77	7	77.8%	2	22.2%	9	100%	
≥ 78	0	0.0%	4	100%	4	100%	
Total	164	82%	36	18%	200	100%	
Mean \pm SD	40.16 \pm 15.5		51.1 \pm 18.7		42.13 \pm 16.5		t = -3.6 P-value=0.002

Table 1: Relation between H. Pylori infection and age of the patient

H. Pylori infection was present in 93 (78.2%) of 119 males and 71 (87.7%) of 81 females with no statistically significant difference between both genders in the prevalence of *H. Pylori* infection, P-value >0.05 , (Table 2 - opposite page).

H. Pylori infection was more prevalent among patients from Salah-Aldeen province (100%), while there was none among patients of Basra province (0.0%), P-value = 0.038, (Table 3 - opposite page).

Summarization of the distribution of symptoms according to the presence of *H. pylori* infection and multiple complaints were recorded in the same patient. There was no statistically significant relation between symptoms and *H. Pylori* infection, P-value >0.05 , (Table 4 - page 18).

The infection rates in patients with D.U. and hiatus hernia were significantly higher than the rates among patients with other endoscopic finding or with normal endoscopic findings; P. value was highly significant (<0.001) (Table 5 - page 19).

Table 2: Relation between H. Pylori infection and gender

Gender	<i>H. Pylori</i>		Total	Statistical test and P. value
	Positive	Negative		
Male	93	26	119	$X^2 = 2.9$ P-value= 0.086
	78.2%	21.8%	100%	
Female	71	10	81	
	87.7%	12.3%	100%	
Total	164	36	200	

Table 3: Relation between H. Pylori infection and provinces of residency

Province	<i>H. Pylori</i> infection				Total	
	Positive		Negative		N	%
	N	%	N	%		
Baghdad	136	82.9%	28	17.1%	164	100%
Anbar	10	90.9%	1	9.1%	11	100%
Babylon	6	85.7%	1	14.3%	7	100%
Diyala	6	75%	2	25%	8	100%
Salah-Aldeen	5	100%	0	0.0%	5	100%
Wasit	1	25%	3	75%	4	100%
Basra	0	0.0%	1	100%	1	100%
Total	164	82%	36	18%	200	100%
Fisher's exact test = 11.5		P.value =0.038				

Table 4: Relation between H. Pylori infection and symptoms

Symptoms	<i>H. Pylori</i> infection				Total	
	Positive		Negative			
	N	%	N	%	N	%
Postprandial Fullness	32	69.6%	14	30.4%	46	100%
Early Satiety	35	74.5%	12	25.5%	47	100%
Epigastric pain	123	86.6%	19	13.4%	142	100%
Epigastric burning	27	84.4%	5	15.6%	32	100%
Bloating	13	81.2%	3	18.8%	16	100%
Nausea	34	87.2%	5	12.8%	39	100%
Vomiting	28	80%	7	20%	35	100%
Belching	11	73.3%	4	26.7%	15	100%
chi square(X^2) = 5.03 P.value = 0.092						

Discussion

This study shows the relation between dyspeptic symptoms, endoscopic findings and various patient's parameters with *H. Pylori* infection among the study sample.

Overall *H. Pylori* infection presents in 82% of the study sample where 18% were free of the infection. This agrees with studies done in Iraq (Mosul[8], Anbar[9], Basra[10]), Saudia Arabia [11], North Jordan [12], Iran [13], Kuwait [14], and Libya [15].

Whereas a lower rate of infection was detected in Jammu/ India[16], Jammica / Italy[3], Thailand[7]. The higher rate of detection of *H. pylori* in this study and other developing countries of the Eastern Mediterranean Region than in developed countries may be attributed to the genetic predisposition of the ethnic groups (mainly Arabs) or to local environmental issues, including dietary factors, inadequate living conditions, poor sanitation, hygiene and overcrowding.

Prevalence rates of *H. pylori* infection had shown a strong relation with young age group, residency of middle provinces of Iraq, positive endoscopic findings, but not with gender or presenting symptoms. It had been significantly found that the prevalence of *H. Pylori* infection decreased with advancing age (P-value = 0.001) as it is acquired at younger age. This is in accordance to the results on Saudi

patients [11], Iran [13], Libya [15], Jammu/ India [16]. While in North Jordan [12] the prevalence of *H. Pylori* increases significantly with age (100% infection rate in patients over 80 years of age). This was more proven when comparing the mean age for patients with positive and negative *H. Pylori* infection. Where the mean age for patients with positive *H. Pylori* infection was younger than that of those free of it (40.16 ± 15.5 vs.51.1 ± 18.7) years respectively and this difference was statistically significant, P-value =0.002. This may indicates that the infection with *H. Pylori* occurs at earlier age. Factors such as severe atrophy or intestinal metaplasia mean that the local environment is no longer ideal for the growth of *H. pylori*. This may contribute to the lower prevalence in elderly patients.[13] Males were more infected than females, and the prevalence of *H. Pylori* infection among males was less than that among females involved in the study (78.2% vs 87.7%) with no statistical significant relation (P- value = 0.086). The same results were found in Anbar/ Iraq [9], Saudia Arabia [11], Jammu/ India [16].

While in North Jordan [12], Kuwait [14] females were more infected than males with lower infection rate among females than males but also with no statistical significant relation.

H. Pylori was strongly related to provinces of residency (P-value =0.038), and it was most prevalent among patients

Table 5: Relation between H. Pylori infection and endoscopic findings

Upper Endoscopy	<i>H. Pylori</i>				Total	
	Positive		Negative			
	N	%	N	%	N	%
Gastropathy	109	90.8%	11	9.2%	120	100%
GU	19	73.1%	7	26.9%	26	100%
DU	10	100%	0	0.0%	10	100%
Gastric mass	5	55.6%	4	44.4%	9	100%
Lax cardia	5	55.6%	4	44.4%	9	100%
Esophagitis	6	85.7%	1	14.3%	7	100%
Gastric polyp	3	42.9%	4	57.1%	7	100%
Gastric outlet obstruction	2	40%	3	60%	5	100%
Hiatus hernia	3	100%	0	0.0%	3	100%
Normal	2	50%	2	50%	4	100%
Total	164	82%	36	18%	200	100%
Fisher's exact test = 31.9				P.value < 0.001		

from provinces in the middle of Iraq, while the least infection rate was found in patients from provinces in the South. This difference may be because of the small sample size or may be related to different living standards including overcrowding and atmosphere temperature.

Epigastric pain was the most frequent symptom seen in 75% of patients with positive *H. pylori* infection while belching being the least frequent one. This result agrees with the results of Iran [13], Jammu/ India [16] and Jamaica/ Italy [3]. This may be explained in that epigastric pain especially if associated with dyspeptic symptoms is more associated with abnormal gastric pathology. [11] On the other hand *H. Pylori* infection was most prevalent in patients suffering from nausea and least prevalent in patients with postprandial fullness; but the prevalence of *H. Pylori* infection has no statistical significant relation with the

presenting symptom in this study. It is now accepted that *H. pylori* is not associated with a specific symptom profile. This was like North Jordan [12]. While in Saudi Arabia [11] and Iran [13] *H. Pylori* infection was more common among patients suffering from epigastric pain.

The most common +ve endoscopic finding in this study was gastropathy in 120 patient (60%) and the least was Hiatal Hernia (3 patients). There was a significant relation between *H. Pylori* infection and endoscopic findings (p-value < 0.001). It was seen in all patients with D.U. and hiatal hernia (100% for each). While in Mosul/ Iraq [8], North Jordan [12] and Libya [15] infection rate was 100% among patients with G.U. The possible explanation for the lower infection rate among patients of this study with G.U. than the other studies is that it may be due to errors in the sampling technique. One half of the patients of this study

with normal endoscopic findings have +ve *H. Pylori*. This goes with results from Libya [15], Thailand [7] and differs from Jamaica/ Italy [3], and this may indicate that *H. Pylori* may be a cause of functional dyspepsia.

Conclusion

The *H. pylori* infection is frequent in patients with dyspepsia which decreases with increasing age with higher infection rates in patients from provinces of the middle of Iraq. Positive endoscopic findings were significantly related to *H. pylori* infection and pathological dyspepsia has higher infection rate than NUD. Although half of the patients with NUD were reported to harbor *H. pylori* infection, yet this study cannot prove a causality relationship between *H. Pylori* infection and dyspepsia because the descriptive study cannot prove it.

Recommendations

1. There is a need to increase awareness of the role of *H. Pylori* in causation of dyspepsia.
2. There is a need for early detection of *H. pylori* infection and its eradication to prevent medication abuse of acid suppression and an improvement in overall quality and severity of dyspeptic symptoms.
3. There is a need for more rapid and non-invasive methods for screening of *H. Pylori* infection in patients with un-investigated dyspepsia to be available at the primary care centers (as a cost effective methods) to reduce the overcrowding on specialty hospitals and minimizes cost and consequences of delayed treatment because dyspepsia is common and strongly correlated to *H. Pylori* infection.
4. It is recommended that endoscopy be used for patients with dyspepsia that is undiagnosed by other methods and unresponsive to treatment to identify those who are infected by *H. pylori* and treated accordingly.
5. It is recommended to do analytic study to prove the cause and effect relationship which include therapeutic interventional studies to prove the improvement of symptoms after treatment.

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The presence of H.pylori in cases of chronic idiopathic urticaria

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Abstract

Introduction: Urticaria (or hives) are a kind of skin rash notable for dark red, raised, itchy bumps. Chronic urticaria, defined as urticaria that persists for longer than 6 weeks, it is not a single disease but a reaction pattern that represents cutaneous mast cell degranulation, resulting in extravasation of plasma into the dermis and the patients may not improve or may depend on medication for years to relieve symptoms. chronic urticaria is one of the most common problems facing dermatologists and other specialities. It is the problem which bothers both the patient and the dermatologist. Traditionally, the approach in patients with chronic urticaria (when physical etiology has been excluded) has been to order a panel of laboratory tests to discover an occult medical condition responsible for the skin findings. In many patients, an extensive workup does not discover an etiology. Patients in whom no explanation for his urticaria are said to have chronic idiopathic urticaria. Various infectious agents have been reported as causes of urticaria, including *Helicobacter pylori*, which is a common worldwide bacterial infection. Its role in inducing allergic conditions, such as chronic urticaria, has been suggested in some reports and ignored in others.

Aim: In our research, we want to look for the prevalence of *Helicobacter pylori* in the serum of patient who presented with chronic urticaria .The patient has endure treatment and is not cured besides partial treatment causes temporary relive of symptoms. So, it is important to make the right decisions regarding the treatment of chronic urticaria by adding triple therapy for those who are H.pylori positive.

Subjects and Methods: This study is a non controlled , consecutive interventional study involving 60 patients during the period from November 2012 to April 2013 with history of urticarial lesions of > 6 weeks, to search for the possible cause of their chronic urticaria.

Results: Among 60 patients suffering from chronic Urticaria only 40 (66.7%) patients were enrolled in the study with chronic idiopathic urticaria.

25 patients (62.5%) of chronic idiopathic urticaria were infected with H.pylori and 15 patients (37.5%) had negative serology for H.pylori . 80% of patients with positive H.pylori had G.I.T symptoms ,18 patients (72%) were achieved eradication with the first line therapy while 5 patients (20%) required the second line therapy for eradication. In 2 patients (8%) H.pylori persisted despite two courses of eradication therapy. Response to eradication therapy was evident in 19 patients (76%) in whom H.pylori was eradicated while 4 patients (16%) showed no response despite eradication of H.pylori . Two patients (8%) with persistent H.pylori infection showed no improvement in the urticarial symptoms at the end of study period.

Conclusion: The results of our study strongly suggest that H.pylori should be specifically tested in all patients of CIU, to identify subset of patients who are infected and who could benefit from eradication therapy. H.pylori should be included in the diagnostic work up of all patients with CIU.

Key words: H.pylori, chronic idiopathic urticaria , chronic urticaria

Aim of the Study

The aim of this study is to identify cases who presented with chronic urticaria at the health center; to detect the appearance of *H. pylori* in the serum of patients with chronic idiopathic urticaria.

Justifications of the Study

Chronic urticaria is one of the most common problems which we face in our clinical practice. It is the problem which bothers both the patient and the dermatologist. Traditionally, the approach in patients with chronic urticaria (when physical etiology has been excluded) has been to order a panel of laboratory tests to uncover an occult medical condition responsible for the skin findings. In many patients, an extensive workup does not uncover an etiology. Urticaria rarely is the sole manifestation of an underlying medical problem. Patients in whom no explanation for the urticaria is established are said to have chronic idiopathic urticaria. Various infectious agents have been reported as causes of urticaria, including *Helicobacter pylori*, which is a common worldwide bacterial infection. Its role in inducing allergic conditions, such as chronic urticaria, has been suggested in some reports and ignored in others.

In our research, we want to look for the prevalence of *Helicobacter pylori* in the serum of patients who presented with chronic urticaria. The patient has endured treatment and is not cured besides partial treatment causes temporary relief of symptoms, so it is important to make the right decisions regarding the treatment of chronic urticaria by adding triple therapy for those who are *H.pylori* positive.

Literature Review

Urticaria (from the Latin *urtica*, nettle (whence *It. ortica*, *Sp. ortiga*, *Pg. urtiga*) urere, to burn) (or hives) is a kind of skin rash notable for dark red, raised, itchy bumps. [1]

Chronic urticaria, defined as urticaria that persists for longer than 6 weeks, is not a single disease but a reaction pattern that represents cutaneous mast cell degranulation, resulting in extravasation of plasma into the dermis and the patients may not improve or may depend on medication for years to relieve symptoms. [1]

The primary subgroups of chronic urticaria include physical urticaria (symptomatic dermatographism, cholinergic urticaria, pressure urticaria), urticaria secondary to an underlying medical condition, and chronic idiopathic urticaria. Physical urticaria, which is reproducible with the appropriate stimuli, can be identified with a thorough history and challenge testing. [2]

Traditionally, the approach in patients with chronic urticaria (when physical etiology has been excluded) has been to order a panel of laboratory tests to uncover an occult medical condition responsible for the skin findings. In many patients, an extensive workup does not uncover an etiology. Urticaria rarely is the sole manifestation of an underlying medical problem. Patients in whom no ex-

planation for the urticaria is established are said to have chronic idiopathic urticaria; however, findings suggest that in 25-45% of patients, chronic idiopathic urticaria is not idiopathic but is an autoimmune disease termed chronic autoimmune urticaria.[2]

After eliminating the physical urticarias and urticarial vasculitis, chronic urticaria can be divided into autoimmune chronic urticaria (45%) and idiopathic chronic urticaria (55%).[3]

Approximately one third of patients with chronic urticaria have either or both antithyroglobulin antibody and anti-microsomal antibody, and up to one fifth have abnormal thyroid function. A positive functional anti-Fc ϵ R test result supports an autoimmune basis and the affected patients may be categorized as having autoimmune chronic urticaria. Approximately one third of patients with chronic urticaria may develop angioedema after administration of aspirin or other nonsteroidal anti inflammatory drugs.[4]

Approximately 85% of histamine receptors in the skin are of the H1 subtype, with the remaining 15% being H2 receptors. The combination of H2 receptor antagonists with an H1 receptor antagonist provides small additional benefit. Doxepin blocks both types of histamine receptors and is a much more potent inhibitor of H1 receptors than diphenhydramine or hydroxyzine. [5]

A number of factors have been reported to cause chronic urticaria, and these include medications (aspirin, other non-steroidal anti-inflammatory drugs, opioids, ACE inhibitors, and alcohol), contact with an inciting agent, latex (especially in health care workers), plants, animals (e.g. caterpillars, dander), food (e.g. fish, garlic, onions and tomato), arthropod assault (the most common cause of papular urticaria) and infections (HBV, HSV, Streptococcus, Mycoplasma, *Helicobacter.pylori* and *Mycobacterium tuberculosis*). [6,7]

Urticaria has been associated with a number of autoimmune diseases, including systemic lupus erythematosus, cryoglobulinemia, juvenile rheumatoid arthritis and autoimmune thyroid disease, including Graves disease.[8,9] Urticaria is a feature of Muckle-Wells syndrome (amyloidosis, nerve deafness, and urticaria) and Schnitzler syndrome (fever, joint/bone pain, monoclonal gammopathy, and urticaria).[10]

Little evidence exists to support the concern that chronic urticaria is a cutaneous sign of occult internal malignancy. In a study of 1,155 patients with chronic urticaria in Sweden, Sigurgeirsson found no association with cancer, although acquired angioedema associated with C1 inhibitor depletion may be associated with malignancy.[11]

Physical factors are the most commonly identified etiologies of chronic urticaria, accounting for approximately 20% of cases. [14]

Chronic urticaria may be a consequence of fibromyalgia-neurogenic skin inflammation and psychological factors are reported to play a role in a number of patients. [12]

Avoidance of mental stress, overtiredness, alcohol, non-steroidal anti-inflammatory drugs, and tight-fitting garments is recommended. Nocturnal pruritus may be reduced by lukewarm bathing and keeping the ambient temperature of the bedroom cool. Application of lotions with menthol and phenol (Sarna) provide prompt relief of pruritus for some patients. [13]

Non-sedating antihistamines remain the mainstay of treatment. Many patients find pruritus less troublesome during the daytime, with pruritus maximized at night when there are fewer distractions. An additional nocturnal dose of a sedative antihistamine such as hydroxyzine or doxepin may be added to the morning dose of a low-sedation anti H1 antihistamine. Doxepin should not be used in patients with glaucoma and should be used with extreme caution in elderly patients or those with heart disease. Doubling the labeled dose of low-sedating antihistamines may benefit some patients, and increasing the dose of these antihistamines is often the safest therapeutic approach for patients who do not have an adequate response to the conventional dose of these medications. [14]

Patients who respond poorly to antihistamine therapy or who are known to have urticaria in which the inflammatory infiltrate is neutrophil predominant may require the addition of colchicine (0.6 mg twice daily) or dapsone (50-150 mg once daily) to the treatment regimen (except patients with glucose-6-phosphate dehydrogenase [G-6-PD] deficiency). Patients with autoimmune urticaria may benefit from methotrexate or cyclosporine. [13- 15]

A possible association between *H. pylori* infection and chronic urticaria has been proposed [16-22], and several mechanisms have been implicated. One proposed mechanism is that an increase in gastric vascular permeability during infection results in greater exposure of the host to alimentary allergens [23]. In support of this suggestion duodenal ulcer patients have a higher incidence of allergic manifestations than controls. IgE-containing cells in gastric and duodenal mucosa seem to be the culprits [24], although there is limited evidence for HP-specific IgE. Thus, the possibility that patients with urticaria develop specific IgE against *H. pylori* is an attractive pathogenic explanation that unfortunately has not been confirmed yet. [25,26]

The immunomodulatory role of *H. pylori* infection in CU is a subject of intensive debate. This immunomodulation is not only dependent on the virulence of *H. pylori* but also on host and environmental factors. An alternative possibility is that immunological stimulation by chronic infection may produce, through mediator release, a non-specific increase in sensitivity of the cutaneous vasculature to agents that enhance vascular permeability.

Furthermore, IgG and IgA antibodies to 19-kDa *H. pylori*-associated lipoprotein were found to play a role in the pathogenesis of CU. [27,28]

Moreover, *H. pylori* causes pronounced complement consumption due to *H. pylori* specific antibodies. This contributes further to the pathogenesis of CU [29,30]. As recent studies have demonstrated, IgG auto antibodies against IgE and/or Fc ϵ RI α can be found in the sera of one-third of patients with CU, and it is postulated that infection with *H. pylori* may induce production of pathogenetic antibodies possibly by molecular mimicry [31]. A growing body of evidence suggests that 30-50% of CU results from an autoimmune process involving functional histamine-releasing anti-Fc ϵ RI α auto antibodies or less commonly, anti IgE auto antibodies [32,33]. Appelmek et al first demonstrated the molecular mimicry between *H. pylori* and lipopolysaccharide (LPS) and anti-Lewis antibodies in autoimmune type-B gastritis. [31] Further evidence was provided by the highly positive autologous serum skin test (ASST) results in chronic urticaria patients with *H. pylori* IgG antibodies [34].

Diagnosis of *Helicobacter pylori*

The available diagnostic methods are summarized in Table 1 (top of next page). Carbon 13 or 14 urea breath test (UBT) and the stool antigen tests are non-invasive tests that can be used for testing in the clinical setting. Serology kits for the presence of antibodies in the blood can also be applied with high accuracy. The commonly used medication proton pump inhibitor leads to false negative breath and stool antigen tests, but does not affect the results of serological tests. Proton pump inhibitors should be stopped at least 2 weeks before performing a breath test or a stool antigen test. It is recommended to perform a follow-up test in patients who underwent *H. pylori* eradication using urea breath tests. If this diagnostic procedure is not available a laboratory-based stool antigen test, preferably using monoclonal antibodies, could be used [35].

Treatment of *H. pylori* infection with triple therapy (a proton-pump inhibitor such as omeprazole 40mg once daily, amoxicillin 1g twice daily and clarithromycin 500mg twice daily for 7 to 14 days) cures up to 90% of individuals. [36].

Subjects and Methods

Type of Sampling: Consecutive sampling involves taking every subject who presents him/herself to the hospital over a specified time period.

Study Design: This study is a non controlled interventional study.

Data collection methods: In the same period permission was granted by the ethics committee and informed consent was taken from all patients. Patients were examined individually. Each patient with Chronic urticaria had an evaluation sheet which was filled by the principal

Non-invasive tests	Carbon 13 or 14 urea breath test
	Stool antigen test
	Serology
Invasive diagnostic tests	Histology
	Rapid urease test
	Molecular methods

Table 1: Diagnostic Methods of Helicobacter pylori infection.

Evaluation sheet for Urticaria	
Date:	Case No. :
Name:	Sex: Age:
Address:	Telephone No.:
<u>Chief Complaint:</u>	
<i>*Present H. :</i>	
-Duration:	
-Distribution:	
-Ass. With Angioedema:	
-Aggravating factors:	
-Relieving factors:	
-GIT symptoms: nausea, vomiting, abdominal pain, heart burn	
-Hx. of drugs:	
-Systemic disease: HTN, DM, Liver, Renal, Vascular	
<hr/>	
<i>*Past medical history:</i>	
<i>*Drug history:</i>	
<i>*Family history :</i>	
<i>*Physical Exam :</i>	
<hr/>	
<i>*Investigations :</i>	
Step 1: C.B.C, ESR, LFT, RFT, GUA, STOOL Analysis, IgE, HBV, HCV, T3, T4, TSH, ANA.	
Step 2: H.pylori detection by ELISA(+ve/-ve).	
<i>*Treatment :</i>	

Table 2 : Evaluation sheet for urticaria

	Male		Female		Total
	CIU	CU	CIU	CU	
11-20	3	2	5	5	15
21-30	1	2	10	3	16
31-40	1	1	6	2	10
41-50	1	0	8	4	13
51-60	2	0	3	1	6
Total	8	5	32	15	60

Table 3: prevalence of chronic urticaria and chronic idiopathic urticaria among different age groups.

investigator (Table 2 - opposite page) before and after therapy, and the findings were compared statistically.

Sample size : 60 human subjects.

Methods: Sixty patients attending the dermatology clinic, at King Khalid Hospital, Najran, Saudi Arabia during the period from November 2012 to April 2013 with a history of urticarial lesions of > 6 weeks as in Figures 1 and 2, were screened to elicit the possible factors of their chronic urticaria. The preliminary screening panel for each patient included complete history, physical examination and the following laboratory tests: complete blood count including differential count, total eosinophil count, sedimentation rate, urine analysis, liver function test, serum test for hepatitis B and C, T3 (free), T4 (free), TSH, anti thyroid antibodies, stool examination for parasites and ova and total IgE (chemiluminescence). Each patient who presented with chronic Urticaria was provided with an evaluation sheet for follow up (Table 2).

Other tests which were done when indicated by patients history included: prick test with a panel of common inhalants and food allergens (animal dander, pollens, house dust mites, milk, egg, nut, tomato, wheat, peach, banana), investigation for focus of infection in various locations (teeth, upper respiratory and urogenital tract). Patients with an identifiable cause were treated accordingly and patients with Chronic Idiopathic Urticaria (chronic urticaria with no identifiable cause) were enrolled in the study (Table 2).

Inclusion criteria: All patients of Chronic Idiopathic Urticaria willing to be enrolled for the study.

Exclusion criteria: patients suffering from physical urticaria, patients less than 11 or greater than 60 years of age, pregnant females, patients who had taken proton pump inhibitors /antibiotics within the preceding 4 weeks,

and presence of other concomitant serious medical and surgical diseases. Forty (8 males, 32 females) patients of CIU (66.7%) with mean age 35.5 years (11-60 years) were enrolled in this study (Table 3). Blood sampling was taken from the target population who complained of chronic idiopathic urticaria to detect H. pylori IgG and or IgA. Patients with positive HP in the blood sample were given first-line therapy comprising omeprazole 20 mg, amoxicillin 1000 mg and clarithromycin 500 mg, twice daily for 14 days.

H. pylori eradication was assessed by Urea Breath test (which has a sensitivity and specificity of 95%). [42] If H. pylori persisted after first line therapy, patients were offered second line therapy, comprising omeprazole 20 mg, amoxicillin 1000 mg, metronidazole 500 mg, twice a day for another 7 days. After completion of therapy, all infected patients were prescribed antihistamines to be used as 'rescue medicine'. Non infected patients were treated with antihistamines or steroids. All patients were followed up during the study duration of six months. Also each patient's objective response to treatment was judged using 3 variables based on the need for 'rescue medicine': complete remission (CR - no need for antihistamines), partial remission (PR - occasional need for antihistamines), and no remission (NR -frequent/daily need for antihistamines),(Table.4 - next page).

The total number of cases with chronic urticaria (CU) was 60 patients.

40 patients with Chronic Idiopathic Urticaria (CIU)

25 patients with (CIU) are (+Ve H.pylori) M:F ratio 5:20

15 patients with (CIU) are (-Ve H.pylori) M:F ratio 3:12

20 patients with (CU) M:F 5:15

H. pylori response	Number of subjects (n=25)	Objective response to treatment			
		CR	PR	CR+PR	NR
+Ve H.pylori eradicated by 1 st . line therapy	18	9	7	16	2
+Ve H.pylori eradicated by 2nd. Line therapy	5	1	2	3	2
Persistent infection	2	0	0	0	2

Table 4: Objective response to treatment. CR (complete remission), PR (partial remission), CR+PR (response to treatment), NR (no remission).

AGE By (years)	Gender			
	Male		Female	
	GIT symptoms	No GIT symptoms	GIT symptoms	No GIT symptoms
11-20	1	0	2	0
21-30	1	0	4	2
31-40	1	0	4	0
41-50	0	1	4	1
51-60	0	1	3	0
Total	3	2	17	3

Table 5: prevalence of H. pylori +Ve patient and G.I.T symptoms among different age groups.



Figure 1: Urticarial lesions on the right side of the upper limb of a 20 year old male patient



Figure 2: Urticarial lesions on the abdomen of a 42 year old female patient.

Results

Among 60 patients suffering from chronic Urticaria, male to female ratio was 13:47. 40 (66.7%) patients were enrolled in the study with chronic idiopathic urticaria. 25 (62.5%) patients of chronic idiopathic urticaria were infected with *H.pylori* and 15 (37.5%) patients had negative serology for *H.pylori*. 80% of patients with positive *H.pylori* presented with G.I.T symptoms and 20% without G.I.T symptoms (Table 5). 18 (72%) infected patients achieved eradication with first line therapy while 5 (20%) patients required second line therapy for eradication. In 2 (8%) patients HP persisted despite two courses of eradication therapy. Response to eradication therapy (CR + PR) was evident in 19 (76%) patients in whom HP was eradicated while 4 (16%) patients showed no response despite eradication of HP. Two (8%) patients with persistent HP infection showed no objective improvement in urticarial symptoms at the end of study period (Table 4).

Discussion

The present study was performed to assess the possible association of HP with CIU. This study is important because there is high prevalence of HP infection among the population and there are conflicting reports of association between HP infection and CIU from several western studies. In this study there is high prevalence of HP infection, with 25 (62.5%) of the patients with CIU. The high prevalence of HP infection has been previously reported in other studies, as well.[37] In the infected patients there is resolution of urticarial symptoms when HP eradication therapy was given. This is in concordance with previous studies, which have shown resolution of urticaria after HP eradication therapy. [38,39] However the role of HP as an eliciting factor for CIU is still controversial. While several authors have suggested a possible role of HP in the pathogenesis of CIU, others have shown no correlation between treatment and remission of urticaria. [38,40] A recent study in Japanese university students showed that allergic diseases are negatively associated with HP infection, especially in men. [41] Another study showed that eradication of HP infection by triple therapy significantly and equally reduces urticarial activity score in CU patients with positive and negative autologous serum test.[42]

The discrepancy between results of these different studies may be due to the different methods used for detection and establishment of HP infection or resistance of HP to therapy or recurrences shortly after successful therapy. The pathogenic mechanism that may exist between CIU and HP infection remains unknown. HP by causing inflammation in the gastrointestinal tract might facilitate absorption of antigens or unmask existing antigens. [43] Once this occurs the production of IgE antibodies responsible for urticarial symptoms might continue even after eradication of HP. Thus HP infection may perpetuate the urticarial tendency of an infected person. [43] HP infection is frequent, but it triggers urticaria only in some infected patients, so long duration studies are needed to establish natural history

of HP infection with respect to urticarial symptoms, their reinfection and retreatment. Only such studies will fulfill the Koch's postulate and only then HP could be labeled as an etiological factor for CU. [43] Already there are reports of patient of CU who had gone into remission after elimination of HP and had a relapse with reinfection, which again cleared after elimination. [43] Addition of HP in diagnostic workup of patients with CIU identifies patients who could benefit from eradication therapy and thus extends the treatment options. [44]

Conclusion

The results of our study strongly suggest that HP should be specifically tested in all patients of CIU, to identify a subset of patients who are infected and who could benefit from eradication therapy. HP should be included in the diagnostic work up of all patients with CIU.

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Changes in Hospital Management and its Impact on the Health Care Delivery System:

An Interview with Ben Frank CEO of Sheikh Khalifa Medical City

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Ben Frank
Chief Executive Officer of Sheikh Khalifa Medical City

“Our pursuit of excellence is a journey, not a destination, and it is our responsibility to ensure that the best quality care is available to our patients.”

Dr. Aref Al Shehhi, Deputy Chief Executive Officer, SKMC

The Gulf Corporate Council (GCC) member states (UAE, Saudi Arabia, Qatar, Bahrain and Qatar) have been witnessing a tremendous increase in the demand for healthcare services and professionals especially at a time when markets across the globe are still recouping from the financial crisis. One influential reason for the skyrocketing healthcare jobs is that the industry is collectively upgrading its facilities and expertise to world-class standards (Saad, 2012). In fact, some standards actually surpass the levels of their European and American counterparts such as Saudi German Hospital-Dubai (Saad, 2012). A study done by Alpen Capital Investment (2014) state that "The GCC healthcare market is projected to grow at an annual rate of 12% to US\$ 69.4 billion by 2018 from an estimated US\$ 39.4 billion in 2013." Saudi Arabia is projected to remain the largest GCC market while Qatar and UAE are expected to be the fastest growing markets. (Alpen Capital Investment Banking, 2014)

Despite the growth in the healthcare market so are the costs associated with it. The main issues behind the increase in GCC healthcare costs are: the rise in sedentary and unhealthy lifestyle, shortage of medical professionals and the increase use of new and advanced technology. (Informa Exhibitions, Life Sciences, 2012) The GCC is recognized as one of the most obese regions in the world. Moreover, the link between obesity and type 2 diabetes is evident by the high percentage of adults suffering from both in the GCC. Studies suggest that obese patients spend 2 -3 times as much as the average patient on health care which puts a huge burden on health budgets than smokers. In the UAE for example chronic lifestyle disease and injuries cause almost 90% of all deaths (Informa Exhibitions, Life Sciences, 2012). Home-grown health specialist is another major problem in the GCC where health care institutions still depend on expatriate workforce, which account to 40-80% of the total workforce (Informa Exhibitions, Life Sciences, 2012). However, even though UAE physicians have better salaries compared to their neighboring countries, the medical profession is less appealing when one takes into consideration the number of working hours, the extensive training, the calls and liabilities etc. (Almazroui, 2014) According to HAAD, "Abu Dhabi alone would need additional 3,100 doctors by 2020". The rising health awareness, education and affluence of the population all contribute to increased use of new and advanced technologies which can increase the healthcare cost by 38-62% and is often not covered by insurance providers (Informa Exhibitions, Life Sciences, 2012).

With governments struggling to keep up with the unsustainable demand on healthcare, they are turning towards Public Private Partnerships (PPP) to "aid in the transfer of quality service to raise the level of healthcare provision across the region" said Julian Hawkins, Partner in charge for consulting services at Deloitte Middle East (Informa Exhibitions, Life Sciences, 2012). A successful PPP not just develops hard and soft infrastructure but

also saves governments as much as 25% on healthcare costs. (Informa Exhibitions, Life Sciences, 2012) This is the case with the UAE where "the government is still footing 70% of the total health cost". (Informa Exhibitions, Life Sciences, 2012) But with Abu Dhabi being a driving force in the development of PPP, management partnerships with some of the major hospitals such as Varned, Cleveland Clinic John Hopkins and Bumrungrad has helped ease the burden.

According to the World Health Organization, "United Arab Emirates is the 27th in world healthcare systems" (UAE Government, 2014) Based on the principles laid out in the Abu Dhabi Economic Vision 2030 the UAE government has developed an advanced infrastructure for the existing and upcoming hospitals. "Currently there are 65 hospitals in the UAE, 15 of them federal institutions, and over 150 primary health-care centers and clinics, in addition to 11 school health centers, 10 centers for mothers and children and 110 special units for mothers and children in hospitals and primary health-care centers. This compared with 7 hospitals and 12 health centers when the Federation was established in 1971". (The UAE National Media Council May 2014).

Evidently, the health care system is changing rapidly. The UAE healthcare industry has shown an unprecedented growth which is expected to continue in the future due to increasing population, rising prevalence of lifestyle diseases and epidemic outbreaks like Corona virus and N1H1 flu. How does the continuous change and rising health care system impact the hospital's management and development to meet the needs and expectations of the public? To examine this question, we interviewed Ben Frank, Chief Executive Officer at Cleveland Clinic Foundation - Sheikh Khalifa Medical City Hospital, the flagship institution for the public health system in Abu Dhabi and the largest hospital and medical city in the UAE, consisting of 586-bed tertiary hospital and 14 outpatient specialty in addition to managing a 125-bed Behavioral Sciences Pavilion and an Urgent Care Centre. Sheikh Khalifa Medical City (SKMC) operates under the management of Cleveland Clinic, consistently named by U.S. News and World Report as one of the nation's best hospitals in its annual "America's Best Hospitals" survey. Prior to SKMC, Frank served as COO of East Jefferson General Hospital for four years and Chief Executive Officer of Central Arkansas Health System for three years. His experiences also include Chief Operating Officer with Piedmont Medical Center. He holds a bachelor's degree in Commerce and Business Administration from University of Alabama and a master's degree in Health Administration from Tulane University New Orleans, Louisiana. Overall, Ben has over 24 years of healthcare experience and joined SKMC in September 2012. The interview focuses on understanding the hospital structure, operations, technology and mentions the key issues impacting the patient experience in the future growth of the health care market with regards to the Emiratization policy and UAE vision 2030.

About the SEHA Health System and the Abu Dhabi Health Services Company PJSC (SEHA):

SEHA is health in Arabic. "The Abu Dhabi Health Services Company PJSC- whose marketing identity is SEHA - is an independent, public joint stock company created to develop the curative activities of the public healthcare system in Abu Dhabi. The company owns and operates all the public hospitals and clinics of the emirate of Abu Dhabi which together make up the SEHA Health System. SEHA is committed to providing high quality, cost effective healthcare in a socially responsible way on par with international standards measured through accessibility, affordability, choice and satisfaction. SEHA has partnered with internationally recognized hospital managers to achieve these goals. These include Johns Hopkins Medicine International, Cleveland Clinic Foundation, VAMED, Vienna Medical University and Bumrungrad International. SEHA owns and operates 12 hospitals with 2,644 beds, 62 ambulatory care, family care and urgent care centers and 2 blood banks. SEHA is one of the largest integrated healthcare providers in the Middle East, with 16,500 doctors, nurses, ancillary care and administrative personnel in its employ. " (SEHA Abu Dhabi Health Services, 2008)

Structure

SKMC is a SEHA health system facility and managed by Cleveland clinic. Explain this management structure and how it helps develop the next phase of SKMC.

SKMC is owned by SEHA, the Abu Dhabi Health Services Company, which oversees operations of all public hospitals in the emirate. In 2007, SKMC chose to have Cleveland Clinic manage the hospital under the agreement of key executives of SEHA and Cleveland Clinic. The Chief Medical Officer (CMO) has three Chief Deputy Medical Officers (CDMO) who each have certain divisions that report up through the deputy CMO's. We report to SEHA senior management. By the end of the management agreement in 2017, SKMC would choose one of three options: continue its agreement with Cleveland Clinic, have a modified agreement or could be independent as was the case with the Cornich hospital which was managed by John Hopkins Clinic and now is owned, operated and managed by SEHA. At this point in time it has not yet been determined which option SKMC would opt for. The value behind this agreement is to take what Cleveland clinic has done very well in the U.S and bring the expertise and programs to benefit the citizens of Abu Dhabi.

Physical changes: The current campus will remain intact. The expansion will happen at the back of the campus and is expected to finish in five years time by 2019. Abu Dhabi, SAHA and HAAD's (Health Authority Abu Dhabi) vision to expand healthcare services and be a part of the evolution of the new SKMC is to take the existing Cornich Hospital and move it to the new campus of SKMC to become integrated with the new hospital.

"The new Sheikh Khalifa Medical City will comprise three hospitals with a total of 838 beds, spread over 300,000 square meters. Such large medical cities and complexes, with billions of dollars of investments lined up, is expected to not only raise the supply of medical infrastructure but also raise the quality of healthcare services in the region". (Alpen Capital Investment Banking, April 2014)

How do you monitor the quality performance of each physician and ensure they get right access and understanding?

We go through annual reviews for physicians. Last year, SKMC published an outcomes book that shows outcomes such as medical training, actual quality figure and sometimes compare it to Cleveland clinic. When you are comparing to Cleveland clinic you are comparing to John Hopkins, the Mayo clinic and other top institutions in the world. We did this last year and expanded it. We have excellent outcomes that when Cleveland physicians came here they are truly amazed with the results and that where it shows great value in this relationship. They can learn from physicians here and export them back to the United States. So they constantly talk about their institutes and divisions on performance, patient satisfaction, and access and patient experience. But a level we haven't really gotten into yet is how to start evaluating physicians on key areas? ; a true personal patient experience where the inpatient and outpatient actually rate their physicians. Or how their peers rate their physicians? Then we look into productivity, outcome, adherence to quality, processes and compare that with Cleveland's model, called Annual Performance Review (APR) that really focus on key areas: quality, satisfaction and access.

In a multicultural environment such as the UAE, miscommunication between healthcare providers and patients is eminent if each party approaches diagnosis and treatment from a different perspective. According to the U.S department of health and Human Services "Cultural competency is one the main ingredients in closing the disparities gap in health care. It's the way patients and doctors can come together and talk about health concerns without cultural differences hindering the conversation, but enhancing it. Quite simply, health care services that are respectful of and responsive to the health beliefs, practices and cultural needs of diverse patients can help bring about positive health outcomes." (U.S department of Health and Human Services, 2013). SKMC has staff ranging from physicians to administrators from numerous values and difference backgrounds which gives SKMC the competitive edge over its U.S counterparts in part because the medical staff is relatively representative of the patient population at the hospital. This makes it less difficult for SKMC to achieve cultural competence. In the UAE, there are different views on family medicine issues when it comes to segregated waiting rooms, conservative lifestyle, and medical treatments for cancer, abortion etc where doctors and their patients may not arrive at the same conclusions

given an identical set of symptoms, or even disagree on what behaviors are “healthy”.

What are the benefits and drawbacks when Cleveland clinic experienced cultural changes when integration with SEHA happened?

Just because a program worked well in the United States may not necessarily mean it is going to work here. So we modified the patient experience program to be culturally adaptive and to be supported in different settings. Orientation programs and awareness campaigns help ease the differences but the drawback is the time it takes to understand cultures and make sure the program will be of great value and benefit where it's being implemented. Since taking control in 2007, considerable time was spent on patient experience and have actually taken programs from SKMC and brought those back to Cleveland Clinic. So it's a mutual relationship that it is not only Cleveland clinic bringing programs but what it can learn from a great partner and bring back to United States and around the world.

SKMC went through a lot of leadership change; inter health Canada, HAAD, Cleveland clinic. How has this impacted the progress and performance of the hospital for the past 14 years?

There has been a change in direction and a good progression since Cleveland Clinic has managed the hospital especially the considerable value brought by the relationship through learning how to better SEHA's expectations.

Operations and Technology in health care

SKMC just received its third accreditation last month by Joint Commission. How often are they reviewed and what other accreditation does SKMC have? When were they given?

There are many accreditations however the most important one is by Joint Commission International (JCI) which is reviewed every 3 years. It goes for 5 full days with 3 surveyors from the Joint Commission. They look at three specific areas; physicians, clinical and administrative. The lab is accredited and reviewed by the American Academy of Blood Bank every 2 years and HAAD is reviewed on a yearly basis. SKMC has held JCI accreditation since 2008, and again in 2011, and as mentioned in 2014. SKMC is also accredited as a Cycle IV Chest Pain Centre with Primary Angioplasty Intervention; and is accredited by the College of American Pathologists (CAP) for its Main Laboratory.

SKMC provides comprehensive healthcare services in all of the disciplines relevant to the needs and priorities of the community to attain the highest levels of patient satisfaction. What qualifications and standards must employees go through to reach the desired standards?

Employees know 6 months in advance prior to Joint Commissions' arrival. Communications are sent weekly through questionnaires and games, making it a fun learning experience. Employees should be practicing and adhering to these guidelines every single day so it should be built-in in how they take care of patients, both for HAAD and the blood banks survey. Since our mission is to provide compassionate, patient-centered care of the highest quality, Joint commission reaccreditation gives further proof that we are a distinguished provider of superior clinical outcomes for the people we serve.

What are the updates and training related costs that factors performance improvement?

Every year, SKMC budgets for education programs and career advancement with a staggering excess cost of AED 3 million for both nurses and physicians. The budgeting is discussed with SEHA and funded by SEHA. Part of the agreement is to also have corporate employees travel to the United States for training and they would provide fund for that as well. It may be to attend a “patient experience summit”, a leadership academy or it may be focused on quality programs.

Can you tell us about healthcare excellence programs?

SKMC is using the European Quality Foundation Model (EQFM) and SEHA is pursuing the Dubai Quality Award (DQA). So the excellence is really focused on the quality process and whether we are maximizing our efficiency in the quality process that we are implementing throughout the institution.

What are the daily decision -making and team shaping opportunities to create a genuinely well performing and healing environment?

We as a leadership team meet almost daily. Senior management set objectives for daily, weekly, monthly and yearly strategies of the institution. Our goal is to really focus on the patient. “Patients' first” is what we truly believe in and everything we do has to focus around doing the right thing for the patient. Along with our medical staff, we continually look at ways into improving and perfecting patient care. Our feedback is done through monthly and daily rounding. Every month, 90 individuals from the leadership team, including myself and senior management, go to different areas of the hospital and talk to staff, patients and their families and ask what we can do better. Nurses and physicians interact daily, bringing constant feedback and try to solve what they can on the spot. Sometimes it can be complex due to a medical type of condition. But it all comes down to communication and how to continually communicate to ensure that patients and families know everything they should about their care. The monthly rounding has worked very well. Despite us being in the hospital every day, the monthly rounding gives the staff the opportunity to see and interact with us. We ask them “how is your day going?”, “what can we provide you to help you do your job better?” If they say we need this piece of equipment

and it is really expensive, we'll look into it but some things we problem solve immediately.

How do you invest in equipment and experienced leaders to provide world class healthcare and drive performance?

Our technology is very up to date. Just recently we were the first in the Gulf to implement the smart IV room which will be used to prepare Total Parenteral Nutrition (TPN) which administers the supply of all the nutritional needs of the body by bypassing the digestive system and dripping nutrient solution directly into a vein. TPN can be used at home for patients who are less mobile and have travel restrictions and therefore provides convenience and peace of mind. In some cases our equipment may be just a little behind technology in terms of Cleveland Clinic. It has to pilot new equipment before it hits the market. In some areas we are as advanced as Cleveland and in others our goal is to become as cutting edge as Cleveland.

What managing information system are you using? How does it benefit them?

SEHA has a very advanced IT system which is very patient focused too. We use a system called "CERNER" (a leading worldwide provider of health information systems and technologies) that's used across the entire SEHA system. The term "Malafi" which means my file/ record in Arabic is an individual file that allows patients to access their own medical records electronically from any SEHA operated institution such as Mafraq, Tawam, Abu Dhabi Health Services, etc. This instant access encourages collaboration between departments and the wider Abu Dhabi medical community which enhances the patient care and efficiency without compromising on confidentiality.

Any research facilities? If not, is there in the future?

We do a significant amount of medical research but it is more on physicians doing studies and publishing papers rather than the clinical/lab type. We could be more into labs but that is a couple years out due to it being complex to initiate. You must have a hidden instigation review board that monitors clinical trials and protocols that CCAD might look into more than us. I am not aware if Tawam is doing further cancer research along with their partner John Hopkins who has a molecular type of study for that level of clinical trials.

According to Alpen Capital (2014), a leading investment Bank that provides solutions to corporate clients in GCC and Asia, one of the challenges of the GCC region is the insufficient number medical practitioners present within their countries. The region is reliant on foreign professionals for meeting the rising demand of health care. However, in the UAE, the reliance on foreign practitioners has declined due to the proactive measures of the UAE government in implementing the Emiratization policy in the healthcare market.

Emiratization

What percentage of Emiratis work at SKMC at the moment? What are the ratios of male to female?

We have a target which is 15% and right now we are exceeding that target with a 15.3% in Emirati workforce: Emirati Female is 73.7%, Emirati Male is 26.3%

Tell us about the Emiratization program and their contribution level at SKMC and SEHA.

We have a national HR director who is very proactive trying to bring more nationals into SKMC. Not only are we focused on our Emiratization of our workforce but also our medical training where we are developing UAE national physicians who will graduate and further support the SEHA system as a physicians in key areas. The numbers of UAE national qualified physicians are increasing drastically and the last graduating class was almost $\frac{3}{4}$ females. So we are seeing more females being interested in becoming a physician.

Do you have examples of training methods or programs to develop the skills of nationals?

Investing in Emirati doctors is of great importance. We provide them with appropriate education and training and with employment opportunities after graduation. At a management level, one of my goals is to mentor and provide guidance to my colleague who is Chief Deputy Executive Officer (Dr. Aref Al Shehhi) so he will eventually become a CEO (Leadership development and succession planning). The same goes for Foreign Deputy Operation Officers who are mentored by our National Chief Medical Officer. One of SEHA's major goals is to raise the level of resident physicians. SKMC worked closely with SEHA and the US-based Cleveland Clinic in 2013 to produce Emirati leaders of the future with the "Three month Observership program" in Cleveland Clinic, United States, empowers the national healthcare professionals to integrate innovation into daily clinical activities. The organizations partnered throughout the year to deliver the UAE Executive Fellowship Program, which had the purpose of advancing senior Emirati roles in the management of healthcare facilities in Abu Dhabi.

Future

According to HAAD, diabetes and obesity are recognized as being particularly prevalent in the UAE. The World Health Organization (WHO) statistics show that the UAE has the world's second highest rate of diabetes at around 19% overall and that this is higher amongst the National population. (Health Authority Abu Dhabi, 2012) In the UAE, chronic lifestyle disease and injuries cause almost 90% of all deaths (Informa Exhibitions, Life Sciences, 2012). Adult nationals were screened for cardiovascular risk factors in 2008 showing obesity rates of 33 per cent for males and 38 per cent for females, indicating a high proportion at risk from diabetes and hypertension. (Informa Exhibitions, Life Sciences, 2012)

What is the driving change within the regions health care providers?

I would say meeting the needs of the growing population of the city and the advancing equipment within the health sector further develops the health care system. Regarding the regulatory changes, the coordination of the health authority with SEHA and HAAD are working much closer together as the health system develops and advances to meet the expectations of the population. New technologies such as e-health services are being increasingly adopted to lower healthcare costs in the region, besides improving the quality of services

Traditionally, UAE nationals and wealthy expats travelled overseas for serious medical treatments. Is SKMC planning to be the next "health tourist" destination?

Once we further develop health care services that should reduce the amount of travel outside the UAE. For example, we have a very unique pediatric cardiovascular heart program and have over 400 pediatric heart surgeries planned this year. It is the largest of its kind in this part of the world (MENA region) rivaling the program in Saudi Arabia. So our goal is to expand that even further so we are able to work with HAAD and have SEHA work with us to make sure we have the right capital to expand our programs both from a technology standpoint and the physician's standpoint, so that more health care is delivered locally than abroad. So I look at health tourism more as an elective and going abroad for cosmetic reasons. SKMC is not going down that route but rather is focused on very complex and serious medical issues that need higher technology and a skilled set of physicians- Emiratis with 4 to 5 years of training on heart surgeries alone. SKMC's kidney transplant program is the only one of its kind in the UAE. Moreover, SKMC's pediatric cardiac surgery program reached 1500 surgeries conducted since its inception in 2007, offering the chance of a happy and fulfilling life for children with congenital heart disorders.

Closing

What are your aspirations for the future of SKMC? What's the best part in being a CEO of an esteemed organization?

I am very fortunate and optimistic to be a CEO and work with so many great Emirati leaders that have taught me tremendous amount I learn every day and I have so much value brought to me both professionally and personally by working with this fascinating culture. I am very confident about the future with the direction of SEHA and Cleveland Clinic. The development of strategies to attract and retain professionals as well the governments support in heading the 2030 vision to make the UAE. Public Private Partnership such as SKMC with Cleveland clinic will surely aid in the development of the healthcare sector. SKMC will continue to provide comprehensive healthcare services in all of the disciplines relevant to the needs and priorities of the community to attain the highest levels of patient satisfaction and be the number one hospital in the

UAE to deliver excellent patient care and services to the national population.

With improved patient experience efforts, unique programs and milestone surgeries, recognitions and awards, advancements in technology and infrastructure, the Emiratization initiative and increased operational excellence shows that SKMC can count itself amongst the best healthcare providers in the country, and the world.

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Training medical students in general practices: Patients' attitudes

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Abstract

Introduction: Training medical students in the setting of family/general practice has increased considerably in the past few decades in Sri Lanka with the introduction of family medicine into the undergraduate curriculum. This study was conducted to explore patients' attitudes towards training students in fee levying general practices.

Methodology: Six general practices, to represent different practices (urban, semi urban, male and female trainers) where students undergo training, were selected for the study. Randomly 50 adult patients were selected from each practice and they responded to a self administered questionnaire following a consultation where medical students had been present.

Results: 300 patients (57.2 % females) participated in the study. 44.1% had previously experienced students. 30.3% were able to understand English. Patients agreed to involvement of students; taking histories (95.3%), examination (88.5%), looking at reports (96.6) and presence during consultation (88.3 %). Patients' perceived no change in duration

(55%) or quality (56.3%) of the consultation due to the presence of students. The majority (78%) preferred if doctor student interaction took place in their native language. 45.8% expected prior notice regarding student participation and two to three students were the preferred number. 93.6% considered their participation as a social service and only 8.8% expected a payment.

Conclusion: The vast majority of the patients accepted the presence of students and were willing to participate in this education process without any reservation. Their wishes should be respected. The outcome of this study is an encouragement to educationists and GP teachers.

Key words: Medical students, training, General practice, patients' attitudes

Introduction

There is a growing trend that undergraduate teaching should take place more within the community, primarily in the general practices(1,2) and as a result worldwide Family medicine has come into the core of the medical curriculum during the last few decades.(3,4) That trend has invaded the Sri Lankan medical schools as well and it is now well established in most of the medical schools in the country.(5)

The reasons for this trend are many; everywhere in the world in-patient care as a proportion of all medical care is decreasing.(4,6) Diseases which required in-patient care earlier no longer do so due to the invention of newer medications and newer techniques and accessibility of general practitioners to investigations, telemedicine and the internet.(4) The duration of stay in hospitals for diseases which require admission has also reduced considerably due to more efficient newer medications and techniques. Educationally, there are implications on undergraduate training due to this trend. The morbidity seen in a hospital ward has become less and less representative of the overall morbidity in the whole population and the opportunity for hands on experience for students has reduced.(4) In the mean time community offers a wealth of teaching opportunities for medical students, a fact which was recognized by the General medical council's directive, Tomorrow's doctors(GMC,1993)(2).

General practitioner teachers have also transformed from their original role as teachers of behavioral science and general practice(7) into teachers of clinical skills, with excellent access to a wide range of patients.(8,9) It has been found that community based teaching is as effective as hospital based teaching of basic clinical skills.(10,11)

General practices offer a highly personalized teaching in an environment where the importance of social, economic, psychological and cultural influences on a patient's illness and the family response can be experienced firsthand. (12) It is also an opportunity for students to get an insight into the socio-economic environment of patients and the local resources available to them.

Participating in a general practice clerkship has been shown to stimulate students to choose general practice for their career(13) and students who will take on another specialty will have gained an understanding of primary care. (14)

Training undergraduates in family practices converts an activity between two parties (doctor and patient) into a three party affair.(15) It's in the privacy of the consultation room that patients divulge and discuss some sensitive issues and the presence of students could affect the doctor patient relationship and interaction. In a family practice patients are autonomous and the majority of the patients are ambulatory. They spend only a limited

time in a family practice and student participation could lead to delays. Patients' consent to participate in medical education is often taken for granted and patients are not always aware of teaching activities.(16) The Faculty of Medicine, University of Kelaniya sends students to general practices during their fourth year. They learn by observing doctor patient encounters, taking histories, performing clinical examinations and getting involved with the management of patients with the GP teacher.

The doctor student interaction usually takes place in English which is the medium of medical education in the country.

Although studies from the western world have revealed the positive attitude of patients towards presence and involvement of students during the consultation, this area remains relatively unresearched in Sri Lanka and the south Asian region. The only reported study from Sri Lanka in this regard also supported the acceptance of students by the patients but this study has been conducted in a non fee levying university family practice.(17)

Therefore this multicentre study was planned to explore attitudes of patients towards students in fee levying general practices.

Methodology

This descriptive cross sectional study was conducted in 6 general practices purposively selected to represent urban and semi-urban practices as well as general practices managed by both male and female doctors. A self administered questionnaire was used to gather demographic data, number of previous consultations with student participation and their willingness to have presence of students at different stages of the consultation, reasons for the willingness, the factors impacting upon willingness, patients' experience of consultations in the presence of students and their views on consent and confidentiality. Fifty consecutive eligible patients who consulted the doctor in the presence of students were invited to respond to the questionnaire. Patients below 16 years, seriously ill patients, and confused or cognitively impaired patients, who were unable to read and write, were excluded. Younger patients were excluded since they may not be able to respond to the questionnaire and the opinion of the guardian could vary depending on the relationship to the patient.

Ethical approval for the study was obtained from the ethical review committee of the faculty of medicine, University of Kelaniya.

Results

A total of 300 patients responded to the questionnaire.

Table 1: Demographic details of the patients

Demographic detail	Frequency	%
Gender		
Female	167	57.2
Male	125	42.8
Age		
16 -34	104	36.2
35-59	125	43.6
60 and more	58	20.2
Educational status		
Up to Grade 5	19	6.4
Grade 6-12	154	51.7
Beyond Grade 12	125	41.9
Income		
Less than 10000 LKR	27	9.5
10000-20000	105	37.0
20001-50000	96	33.8
>50000	56	19.7
Previous consultations with students		
Never	139	48.3
1-3 times	70	24.3
>3 times	57	19.8
Cannot remember	22	7.6
Ability to understand English		
Able to understand well	90	30.3
Able to understand little	157	52.9
Unable	50	16.8

n=300 note: Percentages expressed are of valid responses for a given item, not for the entire sample

Table 2: Patients' agreement on involvement of students

Involvement	Males (%) n=125	Females (%) n=167
Student taking history	92.8	97.6
Student examining the patient	56.1	54.6
Student looking at investigation reports	96.8	97.0
Presence of students during consultation	80.0	94.4
Enjoyed presence of students	86.1	83.8
Presence of students was beneficial	56.1	54.6
Patients' participation is important for students' training	95.1	92.1

Patients' opinion on discussing their problems in English

Overall 81.7% agreed with the doctor discussing their problem in English with students, while 77% felt it was better if the discussion took place in their native language. More people among those who could not understand English preferred if discussions took place in their native language.

Table 3: Patients' attitudes towards discussion in English vs their knowledge of English

Pts' ability to understand English	Able (%) (n=90)	Unable (%)* (n=207)	Significance level
Patients' response.			
Agree to discussing their problem in English	82 (91.1)	160 (78.4)	p=0.136
Better if discussed in native language	55 (62.5)	174 (84.9)	p=0.186

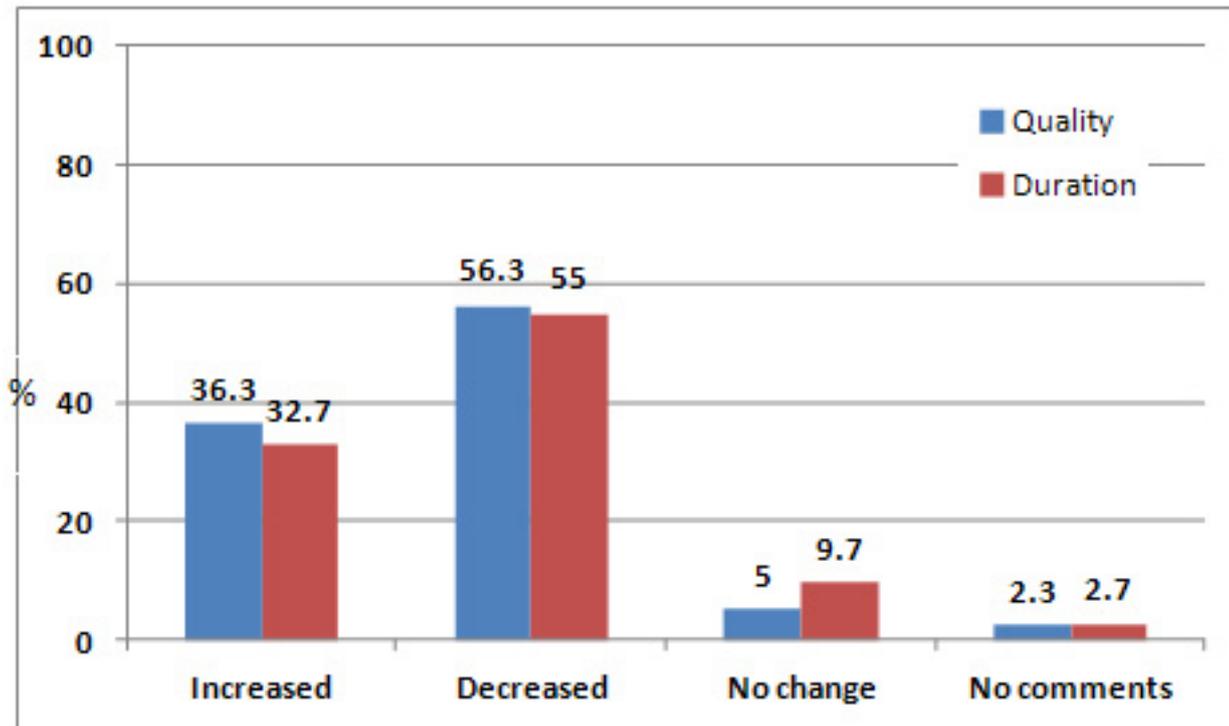
*able to understand little + unable to understand

Only 14.3% of the patients were unhappy about having to spend more time during consultation due to the involvement of students. 75.5% were not bothered while 10.2% did not respond to the question.

Patients' views on number of student participation during consultation

17.1% of the patients preferred the presence of one student while 29.0% preferred 2 students. Another 23.9% preferred 3 and 30% agree with the presence of more than 3 students.

Graph 1: Patients' perception on the impact of presence of students on quality & duration of consultation



Graph 2: Patients' opinion on involvement of training and expectation of a payment

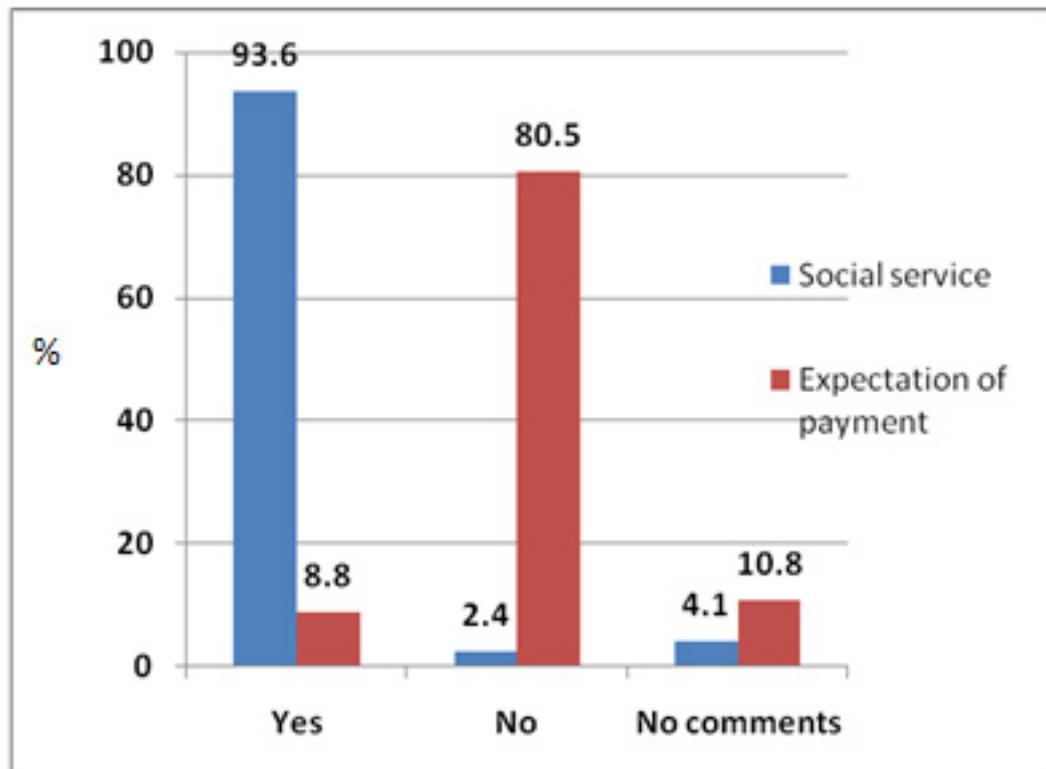


Table 4: Patients' views on consent and confidentiality

View	Yes (%)	No (%)	No comments (%)
Prior notice was there	30.6	64.3	5.1
It's better if informed	45.8	28.0	26.1
Better if I have the right to decide	50.5	20.6	28.9
Feel comfortable in telling not to have students	52.9	22.1	24.9
Students will respect confidentiality	78.4	9.8	11.8

Discussion

For this multicenter study general practices were purposively selected to include general practices with different backgrounds with the objective of obtaining views of a wide range of patients. Analysis of their demographic details shows that the sample included both males and females, patients belonged to all age groups, and different socioeconomic and educational backgrounds. It also included patients who had previous experience with students and those who had not consulted the doctor in the presence of students.

The vast majority of patients had positive feelings about the involvement of medical students. More than 90% of the patients were willing to tell details of the disease to students but only about 50% agreed to be examined by a student. There was no significant difference in attitudes between males and females. There was no resistance to students looking at their investigation reports and the majority not only agreed to presence of students during consultation, they enjoyed interaction with students as well. Quite rightly patients have understood that their participation is important for student training. Number of previous studies also reported high consent rate to presence or participation of students in general practices.(18,19,20) Our finding that patients were less willing to be examined by a student was also in line with reported studies. (16,21,) This study explored views of patients on doctor student interaction taking place in English which is not the native language of the country. Only 30.3% of the participants could understand English language well according to them. Even though they agreed to doctor student interaction in English they preferred if discussions took place in their native language. Studies conducted in western countries where the medium of learning and the mother tongue of patients were the same revealed that patients enjoyed hearing their condition being discussed with the students (22), drew more information from the explanation directed at students and discussions with students led to increased insight into clinical reasoning.(23) Such benefits cannot be expected for patients in Sri Lankan

settings and even could have unwarranted effects such as misunderstandings in patients which could create unnecessary anxiety. Therefore GP teachers should either discuss with students in native language or offer an explanation to patients afterwards. It is important not to sideline patients in discussions and a sense of inclusion and participation is essential for patient satisfaction with the experience. (24)

The perception among patients that the quality of the consultation was not adversely affected due to the presence of students by the majority (92.6%) is an encouragement to GP trainers. In fact about one third felt there was a positive impact perhaps due to more detailed history taking, methodical examination and plan of management and doctor spending more time with the patient due to the presence of students. The findings regarding quality of consultation of this study are in line with previous studies which reported no decreased sense of patient enablement or satisfaction(25,26) and even a positive effect.(26,27,28)

32.7 percent thought the duration of the consultation was more when students were present but the majority (74%) was not unhappy and willing to sacrifice their time.

It is heartening to note that the majority of the respondents were of the view that their involvement in undergraduate training is a social service and did not expect a payment for their involvement and contribution. The probable reasons may be sense of altruism, mutual obligation and giving something back to the system.(24,29)

Patients' opinion on the number of students they would like to interact with at a time varied. When deciding on the number of students the space in the consultation room also should be taken into account. If the room is overcrowded patients may not feel free to divulge information and feel embarrassed during examination. It can create problems for the doctor in managing patients and for students such an environment may not be

conducive for learning. More students could compromise one of the key advantages of community based learning which is the one to one supervision and the attention of the trainer.

According to patients only 30.6% were aware that students would be present during the consultation which is not a satisfactory situation. A fairly high percentage thought it would have been better if they were informed beforehand. It is interesting to note that half the patients felt that they should be given the choice to decide. Studies elsewhere in the world have revealed that patients' consent to participation in medical education is often taken for granted and formal consent is not obtained prior to their involvement in teaching.(16) It is only 52.9% who felt comfortable in telling the doctor not to have students. Patients may feel pressured to consent to the students' presence and they may be concerned that refusal to have students may disappoint their family doctor. There is evidence that patients may have difficulty refusing consent(26) and GPs should be mindful of this fact.

Patients were of the view that students will respect the confidentiality of the information they receive from patients. In one study patients expressed concern that students would talk about them afterwards.(30) Students should be strictly instructed not to discuss about patients in a careless manner.

Issue of consent and confidentiality should be an integral part of teaching in both primary and secondary care and patients should be explained the need of their participation in teaching and advantages and disadvantages of participation of students. Patients should be made aware that they have the freedom to choose and their non involvement will in no way influence the care they receive or the doctor patient relationship. Patient information can be made available in the waiting room and consulting rooms to reiterate that patients have a choice about presence of students.

This study which demonstrates the views of a broad range of patients reveals the positive attitudes of patients and their willingness to participate in student training which is vital for the sustainability of community-based teaching.(31) The findings of this study will be reassuring for doctors who presently are involved and those who plan to be involved in undergraduate training in the future. It will be of help in planning general practice clerkships.

Conclusions

1. Patients are a willing resource for student education in training practices.
2. Patients perceive that presence of students does not decrease the quality of consultation.
3. Patients should be able to choose when they want to be involved in teaching.
4. Trainers should be careful when discussing with students in a language not understood by the patient and at least a brief explanation should be provided to the patient on what was discussed

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The necessity and importance of writing and publishing non-research papers

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Introduction

Scientific research articles are written by scientists in order to communicate new knowledge in solving problems, testing hypotheses and/or advance the boundaries of human knowledge in diverse disciplines. In quantitative research in the health domain we could name such research articles as: cross-sectional, ecological, case-control, cohort and trial studies.

However, there are also some other specific scientific articles that we could categorize as non-research papers. Some of the most common types of these papers are: editorials, letters to the editor, book reviews/film reviews, case reports/case series, commentaries and narrative reviews. The aim of the present article is to discuss these diverse types of non-research papers and their importance.

Editorials

Editorials are often very useful and informative non-research papers written by editors or solicited by them. They usually cover important topics of general interests of the readers, authors and reviewers of a journal. They might also convey the policy of the journal in reviewing and publishing the submitted articles.

Letters to the editor

A letter to the editor seems to be the most common type of non-research paper. Letters are usually written by scientists in response and/or reaction to one of the research papers i.e. cross-sectional, ecological, case-control, cohort and trial studies, which a journal has just recently published. The fundamentals of letters are to inform the authors of a research paper, about a shortcoming and/or an overlooked issue in their paper.

Letters are written to the chief editor of the journal and if she/he finds the letter informative, they refer it to the authors of the original paper and ask for a reply. As soon as receiving the

Abstract

There are some specific scientific articles that we could categorize as non-research papers. Some of the most common types of such papers are: editorials, letters to the editor, book reviews/film reviews, case reports/case series, commentaries and narrative reviews. The aim of the present article is to discuss these diverse types of non-research papers and their importance.

Keywords: Non-research papers, editorials, letters to the editor, book reviews/film reviews, case reports/case series, commentaries, narrative reviews

proper reply, the chief editor might choose to publish the letter and its reply in the next available issue. Such communications between scientists are vital and may help to correct any possible mistakes in a published research paper.

Book reviews/film reviews

Book reviews and film reviews are two other essential non-research papers. Such papers are usually written by experts in the field (critics) on review of a recently published book or a film production in a specific domain.

By focusing on the pros and cons of a book or a film, these types of reviews would provide authors of a book or producers of a film with valuable feedback. Such feedback could establish a firm ground for a new edition of the book and a new version of the film.

Case reports/case series

Case reports deal with the reporting of a rare clinical disease or a case with rare and unique characteristics. Similarly case series deal with the reporting of a series on rare clinical diseases or syndromes.

In both situations such a report could establish a ground for better understanding of a rare but unique case and might even help to determine a new emerging disease or syndrome. For example, reporting of a young homosexual man with Kaposi's sarcoma could eventually help scientists to determine AIDS as an emerging disease.

Commentaries

Commentaries are those non-research papers which reflect the viewpoints of their authors regarding a specific and usually a hot topic issue. Commentaries could be very informative and might be either unsolicited or solicited i.e. invited commentaries. Invited commentaries are usually commissioned by editors to accompany a research paper in the same issue.

Narrative reviews

Narrative or traditional reviews are other important types of non-research paper through which usually an expert in a given subject, retrieves and summarizes the findings of different research papers. The most important limitation of narrative reviews is that the reviewers usually have not specified their search strategy and this might open such reviews into bias.

Although this shortcoming is referred to as the Achilles' heel of the narrative reviews, such reviews might still provide readers with a rich background on a specific issue. Furthermore, in order to curb this inadequacy of narrative reviews, scientists have developed some other robust types of reviews such as systematic reviews and meta-analyses.

Conclusion

Editorials, letters to the editor, book reviews/film reviews, case reports/case series, commentaries and narrative reviews are among the most common types of non-research papers. Writing and publishing such non-research papers highlight a critical and informative environment which is highly necessary for the advancement of science in different disciplines.

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Continuing Medical Education (CME)

- Acute/Emergency Medical Conditions

Case History

A 48 year old woman, Mariam, comes to your clinic, complaining of acute shortness of breath. She is a known COPD patient, with several admissions to hospital in the past.

She has once been referred to a larger hospital as she required ventilation in intensive care. The history now is of 4 days of progressively increasing shortness of breath and greenish/yellow sputum.

Question 1

What will you look for in the examination?

(Answers are on the next page)

Case progression

Mariam is cyanosed, with a respiratory rate of 40, using accessory muscles and is very distressed. She has widespread wheeze throughout the chest with a few scattered crepitations. Her temperature is 99F. Her blood pressure is 100/60 and pulse is 120 regular.

Question 2

Which of the following factors, mentioned in the history and examination above, suggest a poor prognosis for this patient?

Patient's age - 48 years
Greenish/yellow sputum
Respiratory rate of 40
Cyanosis
Widespread wheeze
History of need for ventilation
BP 100/60

Question 3

What is your management strategy?

Answers to Case 1

Answer 1

Remember A, B, C – Airway, Breathing and Circulation.

Assess how long she can speak – full sentence, single word, not at all.

Look for evidence of hypoxia, especially central cyanosis and reduced conscious level suggesting hypercapnic respiratory failure.

Assess for respiratory distress, respiratory rate, use of accessory muscles. Listen to the chest for crepitations and wheeze. Assess respiratory effort.

Assess circulatory status, measuring BP and pulse.

Temperature should also be recorded.

Answer 2

The following factors suggest a poor prognosis for Mariam:

Respiratory rate of 40

Cyanosis

History of need for ventilation

Feedback

When assessing the need for admission for severe disease the following factors are important:

Respiratory rate >30

Hypoxemia

Shock (systolic BP < 90)

Confusion

Multi-lobar infiltrates on CXR

Leucopenia (<4000/cmm)

Elderly patients (age > 65yrs)

Previous history of ICU admission and need for ventilation

The colour of sputum has not been shown to be predictive of severity of disease and in very severe disease wheeze may be absent due to poor respiratory effort.

Answer 3

Give:

Oxygen at 2 litres per minute via nasal prongs.

Salbutamol 5mg via nebulizer

IV hydrocortisone 200mg stat

A third generation cephalosporin (e.g. cefotaxime or ceftriaxone) antibiotic

An antibiotic to cover atypical organisms (e.g. doxycycline, azithromycin or a respiratory fluoroquinolone)

The first line treatment for an acute exacerbation of COPD should include nebulized bronchodilators, systemic corticosteroids, antibiotics and controlled oxygen. In a patient who is less sick, oral prednisolone 40mg can be given instead of IV hydrocortisone. High flow rates of oxygen may reduce respiratory drive in patients with severe COPD. Nebulized ipratropium bromide is also helpful in acute exacerbations.

Cover story:

We have a special cover photo this month which comes with its own small but inspiring story, and one which represents the courage, application and resilience of so many doctors and medical students in the Middle East region, who are faced with ongoing conflicts and turmoil that affect daily lives, education and professional careers.

On the cover we have a photo of Professor Kawa Dizaye of Erbil Iraq and his daughter Sana who has just graduated in medicine from Hawler University. The earlier photo, taken in exactly the same place, is of (then) Dr Dizaye receiving a postgraduate medical degree at the same university, with daughter Sana. Sana put these photos on her Facebook page along with a tribute to her father.

Iraq and Kurdistan are again faced with turmoil, and war and disasters have continued through both pictured doctors lives, education and careers as they have for so many others in the region. I am constantly amazed at the enduring spirit of Middle Easterners and I have been fortunate to meet and become friends with so many from all sides of the divides and find it such a great pity ... that bad things keep happening to good people who deserve so much better. I especially deplore and despair the brutal murder of the innocent children of Gaza, of all children killed in war. As family doctors you no doubt despair yourselves. The photo, sent to me, represents that grace, courage and application I see in the region and what can be achieved despite adversity. I think it is a great example and encouragement to all people of the world, and particularly for young women who in some cases are still facing obstacles to fulfilling their dreams and careers.

Congratulations to both Sana and Kawa and to all achieving their dreams.

Lesley Pocock
Publisher



Medical graduates at Hawler University, Erbil, Iraq, 2014

