



From the Editor

The Middle-East Journal of Family Medicine has progressed to become the medium of interaction of researcher and educator of family medicine in the region. The quality and the number of papers has increased tremendously and we are working on indexing the journal. In this issue a study from Jordan reports on the Prevalence of Otagia in Patients with Temporomandibular Disorders, and Response to Treatment. In this paper the authors reviewed a total of 125 patients with a diagnosis of some form of TMD. Their findings revealed that the prevalence of otalgia in patients with TMD is high.

The paper on the prevalence of hepatitis B carriers revealed that 3.3 % of the sample studied that were not vaccinated are HBs-Ag positive and only one child (0.4) is positive from the vaccinated group. The author concludes that the vaccine is effective in reducing the carrier state, and we should concentrate on the routine screening for all pregnant mothers as apart of pre-natal care.

Dr Aydin S et al reports on PATIENT SATISFACTION with shorter antibiotic treatment for HELICOBACTER PYLORI ERADICATION . The authors stated that long-term regimens are being replaced by short term regimens as the long-term therapies cause more side effects and patient adjustment is not easy. The aim of the study was to determine the efficacy of a short-term therapy regimen and patient satisfaction by conducting a telephone survey 18 months after completion of the therapy regimen. They concluded that their two day regimen appears to relieve symptoms for a long time and it is considered to be effective from our patients' viewpoints.

A second paper from Turkey reports on the total quality management for Turkish primary care. In this paper the authors discussed the development of total quality management (TQM) within Turkish primary care.

In a study from Dubai on 'Antibiotic sensitivity profile of common bacterial pathogens in Dubai ' the authors studied retrospectively the antibiotic sensitivity profile of 107 culture positive samples collected over a period of 17 months. The authors concluded that Antibiotics like Co-trimoxazole and Gentamycin fared better than newer antibiotics because of limited use.

Dr Mistik S et al reviewed the Change in Medical Students' Opinions and Attitudes Towards Mental Illness using a questionnaire comprising 19 questions regarding opinions and attitudes towards mental illness. A total of 308 students filled out the questionnaire. It appears that there is stigmatization of mentally ill patients even among the medical students, which could be decreased with the addition of lessons on stigmatization of mentally ill patients and more social intercourse with the patients.

Dr Almustafa B et al discussed the safety of vaccination practice in Saudi Arabia. In a well-designed pre-stratified systematic random sample, 836 children of less than 2 years were selected in 6 primary health care (PHC) centers in Qatif district. Companions were instructed to monitor adverse events for 3 consecutive days following diphtheria, tetanus and pertussis (DTP) immunization. The authors concluded that the incidence and nature of AE following DTP are similar to those of internationally reported figures. No cases of local abscess were reported. This reflects a comparable safety of vaccination practice in Saudi Arabia.

In addition this issue is rich with news from the region and commentary about new developments in the field.

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Prevalence of Otolgia in Patients with Temporomandibular Disorders and Response to Treatment

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Key words: TMD (temporomandibular disorder), otalgia, pain

ABSTRACT

Objectives: To investigate the prevalence of otalgia in patients with temporomandibular disorders (TMD), and to evaluate the response to conservative TMD treatment.

Methods: A total of 125 patients with a diagnosis of some form of TMD were clinically examined and interviewed to disclose their TMD related complaints and to reveal their pain scores, both at an initial visit and after six months of conservative TMD treatment.

Results: Otolgia was a complaint in 46 patients (36.8%). Of the 125 patients, 86 (68.8%) were female. Following the course of six-month conservative TMD treatment, there was a significant decrease in overall pain experience.

Conclusions: The prevalence of otalgia in patients with TMD is high. In the majority of TMD cases, conservative TMD treatment proved to be effective in controlling TMD along with decreasing the pain scores including otalgic pain.

INTRODUCTION

Temporomandibular disorders (TMD) are defined as a collective term embracing a number of clinical problems that involve the masticatory muscles, the temporomandibular joint (TMJ) and associated structures, or both" [1]. They are considered to be a sub-classification of musculoskeletal disorders, and typically run a recurrent or chronic course, with a substantial fluctuation of TMD signs and symptoms over time. Common signs and symptoms of TMD are clicking or crepitation noises in the TMJ, limited jaw opening capacity, deviations in the movement patterns of the mandible, and masticatory muscle and/or TMJ pain in the face [2,11].

Chronic pain in the TMJ or the pain dysfunction syndrome is common affecting 15-20% of the population at some time in their life [3].

Not only is the TMJ the immediate anterior relation of external auditory meatus, but also its capsule is supplied by an articular branch of the auriculotemporal nerve that also supplies cutaneous sensation to a large portion of the pinna of the ear [4,10]. Not surprisingly, temporomandibular disorders are frequently misinterpreted by the patient as earache.

Goodfriend (1933) [5]; an American dentist, is often credited as the first to report a relation between otalgic symptoms and the temporomandibular articulation.

Costen (1937) [6], described a syndrome consisted of a symptom complex of loss of hearing, otalgia, tinnitus, dizziness, headache, and burning sensation of the throat, tongue; originally ascribed to over closure causing excessive backward movement of the head of the condyle and pressure on the auriculotemporal nerve. Currently, Costen's syndrome, is recognized as not being well founded on anatomic and physiologic principles. Moreover, Brookes, Maw and Coleman (1980) [7], in a series of 45 patients with TMD and aural symptoms were unable to find a direct aetiological basis to link TMJ dysfunction and other aural symptoms apart from otalgia.

Otolgia is a common aural symptom of functional disturbances of the masticatory system; it is surprising that in only less of 50% of the adult patients with otalgia, it is possible to diagnose ear disease [8].

Few studies in the literature focus on the occurrence, prevalence and treatment of otalgia in TMD patients. The reported prevalence of otologic complaints varies in the literature. However, only few complaints are supported by audiometric documentation [14]. Most authors agree that the prevalence of otalgia in TMD patients is in the range of 5-20% [12,13].

The aims of this study are to investigate the prevalence of otalgia in a group of TMD patients and to evaluate the response to conservative TMD treatment.

MATERIALS & METHODS

This prospective, clinical study was carried out with TMD patients attending the dental department at Prince Hashim Bin AL-Hussein Hospital of the Royal Medical Services between February 2002 and January 2003.

A total of 125 patients diagnosed with some form of TMD participated in this study; they were divided into two groups: Group 1 consisted of 79 patients (63.2%) with no ear complaint, and

Group 2 consisted of 46 patients (36.8%) who presented with otalgia along with TMD symptoms. All patients in this second group were referred to an ENT clinic and were examined by the otolaryngologist before initiating TMD treatment to exclude organic ear cause of otalgia.

The diagnosis of TMD was based on the finding of at least two of the following features: limitation of jaw opening, deviation of mandibular movement, joint sounds (click or crepitation), pain on palpation of the TMJ, and pain on palpation of associated muscles.

Because no apparent ear disorder was found, no specific therapy for otalgia was initiated.

For both groups, a similar treatment protocol was followed which consisted of TMD conservative treatment policy: counseling, physiotherapy, occlusal splint therapy and occasionally, non-steroidal anti-inflammatory drugs (NSAIDs). In severe cases of acute osteoarthroses, intra-articular steroid injections were carried out. In indicated cases, some form of occlusal therapy (occlusal equilibration or restorative treatment) was also performed, but only after pain and most of the dysfunctional symptoms subsided.

Self-administered questionnaires regarding the severity of pain were used to collect the data based on a visual analogue scale. The patients were divided into four groups according to severity of pain: no pain, mild, moderate or severe pain.

The treatment outcome was evaluated by improvement in the pain severity using the same visual analogue scale questionnaires six months after first examination and start of treatment.

Statistical analysis was performed with the chi-square test. Significance levels of $p < 0.05$ were established.

RESULTS

Of the 125 patients, 86 (68.8%) were female and 39 (31.2%) were male, they were aged 13-68 years (mean 29.8 years).

Table 1 shows the age distribution of study population. 79 patients (63.2%) had no ear complaint, while 46 patients (36.8%) reported otalgia as a presenting symptom along with TMD symptoms.

In the otalgia group, more women (67.4%) than men (32.6%) had otalgia.

More patients in the otalgia group had severe pain (19.6%) than patients without otalgia (13.9%); however, this difference was not statistically significant.

In both groups, most patients complained of moderate pain (75.2% of both groups). Figure 1 demonstrates percentage distribution of patients at initial examination.

There was a statistically significant decrease in overall pain experience in both groups six months after initial examination and start of treatment.

Only 4.0% of the patients were found to still suffering from severe pain as compared with 16.0% of patients at initial examination.

23.2% of patients reported moderate pain, while most of the patients (72.8%) ended with mild or no pain; when compared with 8.8% of patients who had reported mild or no pain at initial examination; in both groups, this was statistically significant ($p < 0.05$).

Figure 2 demonstrates percentage distribution of patients six months of initial examination and start of treatment.

There was no longer any significant difference between the severity of pain experienced by both groups six months after the first examination and the commencement of treatment.

Figure 3 and Figure 4 demonstrate the significant improvement in pain experience in group 1 (without otalgia) and in group 2 (with otalgia) respectively following the six-month conservative treatment.

Finally, by the end of the six-month treatment period, 54.3% of the otalgia-group patients no longer had ear pain, and 30.4% experienced mild or occasional ear pain.

DISCUSSION

This current study revealed a high prevalence of otalgia in patients with TMD (36.8%). This was higher than the frequency reported in most studies in the literature, which ranges between 5% and 20% [12,13]. This difference can probably be explained by differences in patient material studied and in better estimation of prevalence of otalgia in TMD patients that were carried out by the dentist and the otolaryngologist in close cooperation. Pain is one of the most disturbing of human experience, and it must be remembered that individuals vary widely in their appreciation of, and reaction to it, and the same individual may react in different ways to a similar pain at different times.

A higher pain level was found in TMD patients with otalgia than in TMD patients without otalgia. Most patients suffered from moderate pain.

Women had more incidence of otalgia (67.4%) than men (32.6%). This warrants more investigation; in their study of symptoms and signs of TMD, Kutila et al [24], concluded that women had more aural symptoms than men. Literature review revealed that women report symptoms of TMD at least twice more often than men, also it has been stated that women are more likely to have multiple TMD symptoms than men [11,20,24].

Six months after the first examination and the start of conservative TMD treatment, the pain score had decreased significantly in both groups. The majority of patients (72.8%) ended with mild or no pain. Earache disappeared completely in 54.3% of patients initially presented with otalgia and TMD; otalgia was mild or very occasional in frequency in 30.4% of patients. In 15.3% of patients, no change in pain intensity or pain frequency could be obtained.

Different theories have been proposed to explain the occurrence of otalgia and other ear symptoms such as stuffiness, tinnitus and hearing loss in association with temporomandibular disorders.

Some investigators have hypothesized that Eustachian tube dysfunction, masticatory muscle dysfunction, or reflex sympathetic vasospasm of labyrinthine vessels occurs secondary to abnormal stimulation of autonomic nerves of the TMJ [7,19,20,22,23].

Some authors considered compression of the external auditory meatus or of the auriculotemporal nerve due to mandibular over-closure and posterior displacement of the condyle a possible cause inducing the aural symptoms in TMD [6,18], whereas others refuted this theory [19].

Moreover, reflex motion disturbances of the tensor tympani and veli palatini muscles, as well as the oto-mandibular tiny ligaments (diskomalleolar and tympanomandibular ligaments); have been suggested by some authors as being responsible for ear symptoms [4], but other investigators could not confirm these anatomic findings [16,17].

Other concepts that pertain to aural symptoms of TMD have focused on the internal derangement of the TMJ as a possible cause [21] and the direct mechanical influence on nerve branches in the TMJ region [8,15].

Current explanation of otalgia occurrence in patients with TMD stems from the complex innervations of all parts of the ear and the phenomenon of referred pain that probably can be explained by a central summation mechanism in relation to gate theory [9].

Definitive conclusions on the direct aetiologic mechanisms cannot be drawn from these studies because the mechanism involved is not identical for all TMD patients with otalgia. However, it should be always remembered that pain is a warning and is always real to the patient, and that if it is not possible to

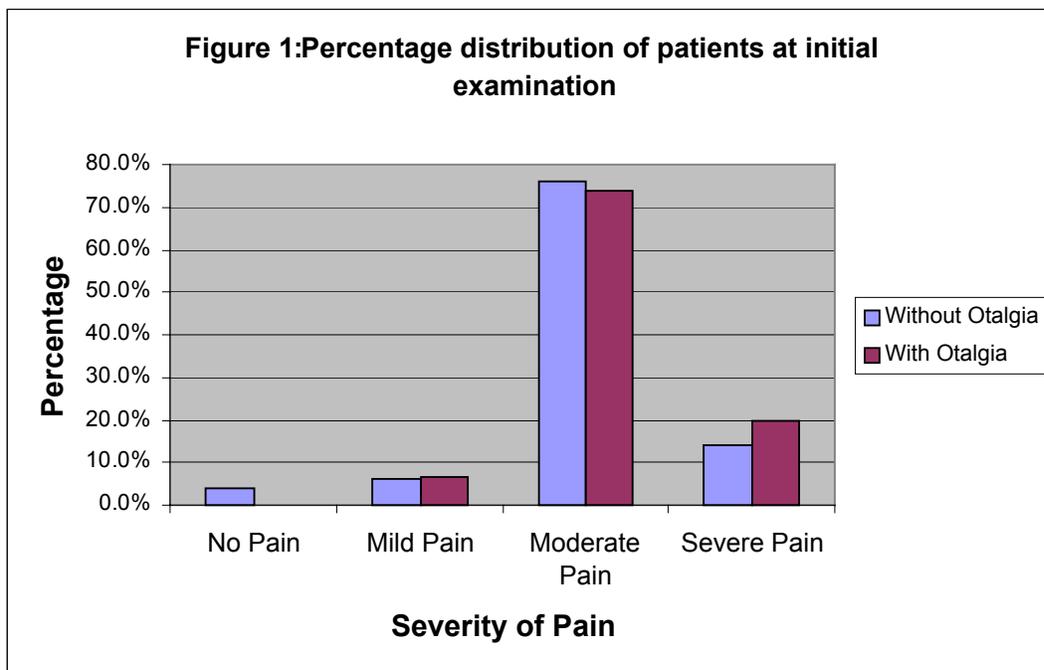
find the cause of pain, this should be regarded as the physician's responsibility rather than being the patient's fault.

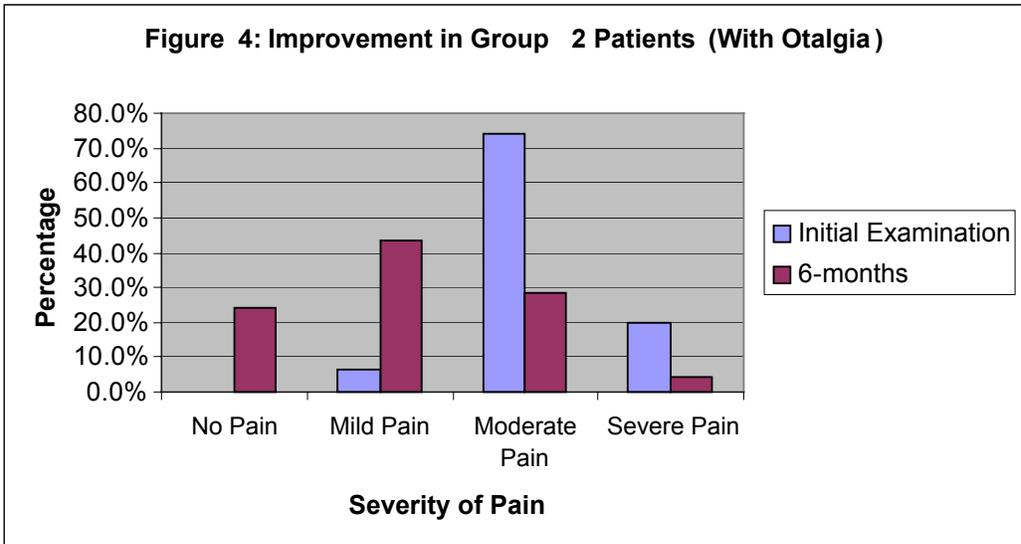
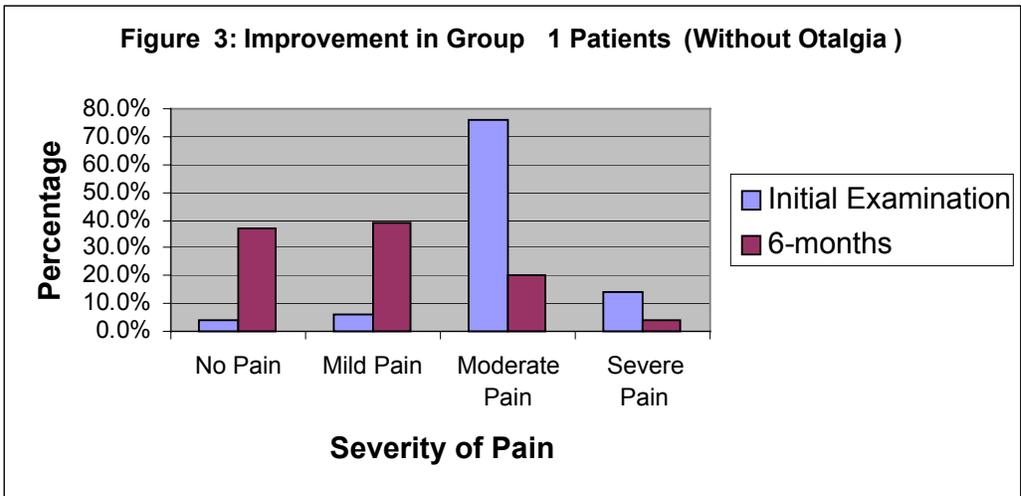
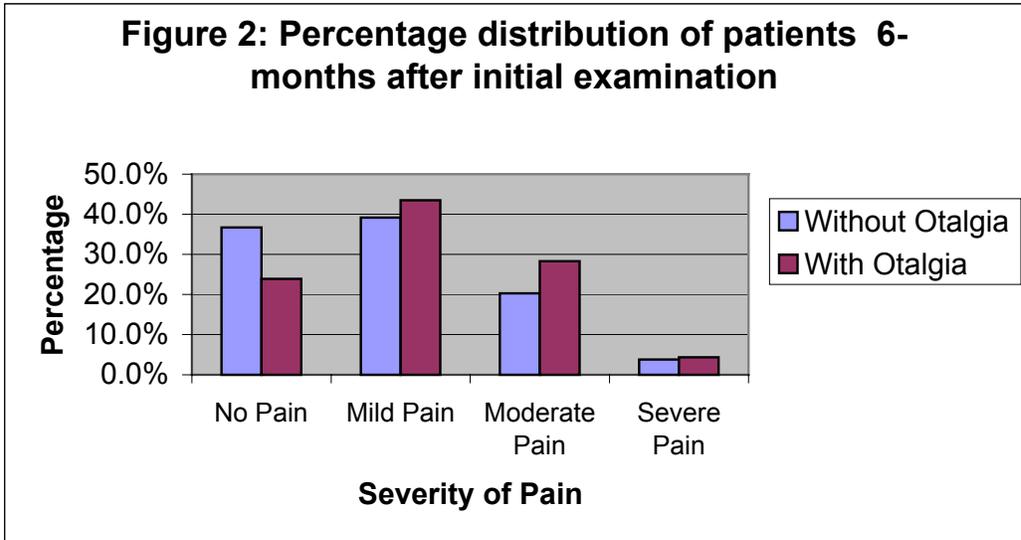
CONCLUSION

1. The prevalence of otalgia in TMD patients is high.
2. The conservative treatment is an effective way for managing TMD patients, moreover, otalgia in TMD patients did respond to the treatment protocol instituted for all TMD patients.
3. Close cooperation between the dentist and the otolaryngologist is of paramount importance in recognizing and diagnosing the TMD patients with otalgia.

Table 1. Age distribution of the study population

Age	No.	%
11-20	18	14.4
21-30	43	34.4
31-40	35	28.0
41-50	19	15.2
51-60	7	5.6
61-70	3	2.4





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Patient Satisfaction 18 months After a Two-day Quadruple Therapy for Helicobacter Pylori

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Key words: Helicobacter pylori; patient satisfaction; eradication therapy; telephone survey

ABSTRACT

Objectives: Because the Helicobacter pylori (Hp) infection has been the most seen infection in the world, many research studies have been conducted to find an effective therapy regimen for eradication. Long-term regimens are being replaced by short term regimens as the long-term therapies cause more side effects and patient adjustment is not easy. Our aim was to determine the efficacy of a short-term therapy regimen and patient satisfaction by conducting a telephone survey 18 months after completion of the therapy regimen.

Materials and Methods: The patients with upper gastrointestinal system complaints who had presented to the gastroenterology day clinic in Ankara Numune Hospital were chosen for this study. They were evaluated, taking into account their historical, physical, laboratory, endoscopic, and histopathological findings. Patients who were found with Helicobacter pylori, but had no other symptoms or disorders, were given a two-day amoxicillin, ornidazole, and tribismuthsubcitrate therapy after a five-day lansoprazole therapy. The evaluation was repeated one month after the regimen. In addition, a telephone survey was conducted 18 months after eradication, and the patients whose upper gastrointestinal system complaints were completely eradicated were asked if they had any additional upper gastrointestinal system complaints during this 18-month interval.

Results: We applied the eradication therapy to 36 people. Complete eradication was obtained in 31 of the 36 patients. For the follow up telephone survey, we could not reach five of the patients due to changes in their address and/or telephone numbers; 15 patients indicated that they had not taken any drug; and 12 patients had no complaints during this 18-month period. Six patients received H2 receptor blocker irregularly, and five patients had taken our regimen once again on their own. All of the patients reached during the 18-month follow-up stated that they were satisfied with the therapy.

Conclusion: Our regimen appears to relieve symptoms for a long time and it is considered to be effective from our patients' viewpoints.

INTRODUCTION

Because the Helicobacter pylori (Hp) infection has been the most seen infection in the world, many research studies have been conducted to find an effective therapy regimen for eradication. Long-term regimens are being replaced by short term regimens because the long-term therapies have been found to cause more side effects and drug adjustment of patients is more difficult.

In developing countries like Turkey, Hp infection is more common (1). Because of the difficulties of drug maladjustment of patients, ineffective antibiotics, and common usage of antibiotics, it becomes much more difficult to eradicate Hp in developing countries. The effectiveness of a therapy can be shown not only by the eradication and side effect rate, but also by patient satisfaction.

In this study, we aimed to determine (a) an effective short-term therapy regimen that can be used by a developing country and

(b) patient satisfaction with our therapy by following up with a telephone survey 18 months after eradication.

METHODS

We chose patients with upper gastrointestinal system complaints, who had sought treatment at gastroenterology day clinics at the Ankara Numune Research and Practice Hospital during the period of December 1998-July 1999. In our study, we accepted patients who had been cured by earlier treatment, but who still had some complaints. We also accepted patients, who repeated their earlier treatments once more. After getting information about the study, oral informed consent was taken for each patient and they were assessed physically, clinically, and through laboratory findings. We only accepted patients, who had no other systemic symptoms or disorders. Any drugs they had been taking were stopped at least 15 days before the endoscopic assessment.

They were subjected to endoscopy after a 12-hour period without food. Before the examination, endotracheal Jetocaine was applied for 4 minutes. A Pentax FG29X flexible gastroscope was used. During the endoscopy, at least two specimens were taken from the antrum, corpus and fundus of the stomach. Biopsy specimens were taken for histological and urease tests, and within a half hour, those biopsy specimens, which were placed in a 70% alcohol solution, reached the pathology laboratory. The biopsy specimens were painted with a Hemotoxylene- Eosine stain. One month after the therapy, all of these applications were repeated.

We applied a regimen consisting of a five-day-therapy of lansoprasole (30mg bid), a two-day-therapy of tribismuthsubsitrate (300mg qid), amoxicilin (1gram bid), and ornidazole (500mg bid) with lansoprasole. The patients were reassessed one month after treatment. A telephone survey was conducted at the 18th month after eradication and patients, who were treated successfully, were called 18 months after the treatment and asked if they had upper gastrointestinal system complaints after our treatment and if they had been retreated.

RESULTS

42 patients were enrolled in this study. Four patients indicated that they felt fine and did not need to repeat the endoscopic examination. Three patients had stopped the regimen because of side effects. Eradication was successful in 31 out of 35 patients (88.61%). Ulcers were seen in 11 (31.43%) patients, whose upper gastrointestinal system complaints had been completely eradicated after the therapy (eradication rate was 100%). In non-ulcer patients, the eradication rate for their upper gastrointestinal system complaints was 83.33% (20/24 patients). Table 1 shows the distribution of patients.

All the patients reported that their complaints were improved after the therapy.

Eighteen months after the therapy, 31 patients were called again to determine both the effectiveness of our therapy and patient satisfaction. We were able to reach 26 patients. Among those, 18 had no complaints and had not required additional treatment. Eight patients stated that they had the same upper gastrointestinal system complaints and only two of them reported that these were the same as they had prior to the treatment and because of this they needed to use the same drugs again once (Table 2). Only five of the 26 patients needed to use drugs again (Table 3) and two of them stated that they had the same complaints after they underwent surgery for other reasons and parenteral H2 receptor blocker were prescribed for them. The remaining three patients reported that they used the same regimen once more and after the second application they had no complaint.

DISCUSSION

Since discovery of Hp, many research studies have been conducted to detect its connection with chronic gastritis, duodenal ulcer, gastric ulcer, and adenocarcinoma (2,3,4). These observations have led researchers to conduct therapeutic investigations. Although the Hp microorganism is sensitive to antibiotics invitro, it is too difficult to eradicate in vivo.

As Hp is a true pathogen, there is an increasing inclination in the world to treat all Hp positive patients(5). Many therapy regimens have been tried. Among these, the eradication rates of monotherapies vary from 0 to 44%, whereas combined therapies have eradication rates from 33 to 94%(6,7). Although the two-week-triple therapy regimen is the most accepted, patients

experience side effects, which is the major disadvantage. Nowadays, researchers try to find new therapy regimens with fewer side effects and ones that do not affect the patient's ability to think and speak clearly.

Amoxicillin, bismuth, and ornidazole are found effective in different combinations. By adding PPI, an antisidic environment is provided, and bactericidal effectiveness is increased. Lansoprazole has 4 to 10 times more antihelicobacteric effect and performs acid suppression more quickly. When given two times daily, the 24-hour medium gastric pH increased. Furthermore, it relieves symptoms more quickly than omeprazole. It also reduces the risk of gastrointestinal bleeding(8,9).

In a 7-day-therapy regimen, eradication rates are greater than 90%(10). De Boer et al, recommend that there is no need to continue. In these regimens and in the quadruple regimens, side effect rates are 2.8%. Houben et al, make a comparison of these regimens and find that the eradication rate of bismuth-dependence after one or two weeks was less than 80% (11). In another study, a four-day quadruple regimen rate is 94% in a well-developed country (12). Our eradication rate was lower, and we thought that the main reason is that in developing countries infection and bacterial resistance are higher than in developed countries. In another study that was held in Italy, a two-day-quadruple therapy regimen is applied, and the eradication rate is 84% (13). It is much closer to our results and more successful in ulcer patients, as in our study.

Also there are some limitations of our study. We searched if our patients were satisfied with the therapy rather than the absence of Hp at the 18th month. Further investigations in this field should be done to determine the existence of Hp a long period of time after a therapy regimen.

CONCLUSION

Our treatment for eradicating Hp, especially in patients who have ulcers, is beneficial for both the patient and society(14). We recommend that all patients, who have a history similar to our patients, should be identified for Hp and treated.

As the main goal of the therapy of peptic ulcer disease is to eradicate Hp which will decrease the recurrence rate of ulcers (15), we think that we reached this goal by this regimen.

Our results at the eighteenth month supported our first results. Our study shows that our regimen was an effective one also from the viewpoint of the patients. Our regimen appears to relieve symptoms for a long time so it can be considered as a successful treatment plan. We suggest that short-term treatment is effective, causes less side effects, and results in more coherent and satisfied patients.

Table 1. Clinical Diagnosis of Patients in whom *Helicobacter* could be eradicated

Diagnosis	n	%
Ulcer	11 (11)	35.5
Gastritis	20 (24)	64.5
Sum	31 (35)	100

Table 2. Existence of complaints of patients who could be reached by telephone survey

Complaint existence during the 18 months	Female		Male		Sum	
	n	%	n	%	n	%
Exists	5	31.2	3	30	8	30.8
None	11	68.8	7	70	18	69.2
Sum	16	100	10	100	26	100

Table 3. Drug use of patients during the 18 months

Drug use	Female		Male		Sum	
	n	%	n	%	n	%
Yes	3	20	2	18	5	38
No	13	80	8	82	21	62
Sum	15	100	11	100	26	100

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The Prevalence of Hepatitis B Carrier status Before and After Hepatitis B Vaccination

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Key words: Patient, satisfaction, services, primary health care, Kuwait

ABSTRACT

Aim: To measure the prevalence of hepatitis B carrier status in the pediatric population before and after the era of hepatitis B vaccination.

Method: A prospective study done in two cities of Jordan Tafelah and Zarqa, a random screening for HBs Ag by ELISA method for 247 children who were not vaccinated during the year of 1997, and also done for the same number of children who were vaccinated for the same age group during the year of 2004.

Results: 8 (3.3) persons are HBs-Ag positive and only one child (0.4) is positive from the vaccinated group .

Conclusion: Hepatitis B is a common disease, and vaccination is effective in reducing the carrier status, and we concentrated on routine screening for all pregnant mothers as a part of prenatal care.

INTRODUCTION

It is evident that HBV infection is a serious public health problem in the middle east area. The majority of countries in the region have an intermediate or high indemicity of HBV infection.(1)

The chronic carrier of hepatitis B is an important risk factor in the development of serious diseases, such as chronic persistent hepatitis , chronic active hepatitis, and liver cirrhosis and hepatocellular carcinoma.(2)

The World Health Organization (WHO) has considered it a disease of public health importance. So it has recommended universal immunization against it by including a vaccine into Expanded Program for Immunization (EPI) schedule for children.(3)

The first Middle East countries to introduce hepatitis B vaccination into their EPI, were Saudi Arabia and Qatar in 1989. These were followed by Oman in 1990, Bahrain, Iraq, Syrian Arabic Republic, UAE in 1991, Egypt in 1992, Palestine in 1993, Jordan and Tunisia in 1995, and the Republic of Yemen in 1998.(4)

AIM

Our aim is to measure the prevalence of HB carrier status in children before and after the period of hepatitis vaccine, and to find the most effective way of protection .

METHODS

A random selection of children who are below the age of 10 years was done after taking the consent of the parents. Blood samples were taken and tested for HBs Ag using the ELISA method , 247 children were included in the study during the year of 1997 . The same numbers of children were screened during the year of 2004 for the same age group who received the three doses of vaccine via the national vaccination program during the first year of their life.

A complete evaluation for the patients who were found to be HBs-positive , included liver function test , prothrombin time, partial thromboplastin time, HBs-Ag ,HBe-Ag and Ab, HBe-Ab,

HAV-Ab , HCV-Ab. Family screening was done for all the family members.

RESULTS

During the year of 1997 a total number of 247 children were screened; 106 (43%) were females and 141 (57%) were males; a total of 8 patients were found to be HBs Ag-positive.

The same number of patients was screened for HBs Ag, for the group of children who received INGERIX vaccine via the national vaccination program. It consisted of three doses. The first dose is given at the age of two months, and the second dose is given at three months and the third dose at the fifth or the six month. The age group ranged from the first year of life to ten years of age.

Only one child was found to be HBs -Ag positive. This child is an eight month old and he was admitted with fever and was found to have acute viral meningitis. Liver function tests showed mild elevated liver enzymes, hepatitis screen showed HBs Ag positive, HBs Ab was negative, Anticore Ab was positive for IgG. The family screening showed a HBs positive mother, and she was not aware of her status.

DISCUSSION

According to the percentage of HBV chronic carriers among the adults in the general population , the countries were classified into three categories as low endemicity (<2%) , intermediate endemicity (2%-5%), and high endemicity (>5%).(5)

Here in Jordan the prevalence of HBS Ag positive ranges from 2.6-10%.(6)

Hepatitis B virus is one of the world's most important causes of disease and death. More than one third of the world population have serologic evidence of past or present infection, with over ??? being chronic carriers of the virus. (7,8)

There are many modes of transmission, including vertical transmission and horizontal transmission.

Vertical transmission: the virus does not cross the placenta but is transmitted from the pregnant carrier through invasive pro-

cedures such as amniocenteses, and when the newborn comes into contact with the mothers infected blood, during delivery. The infant can be protected by vaccination.

The proportion of infected newborns depend on levels of infectivity; if the mother is HBS Ag positive and HBe Ag positive, 90% of infants will become infected without appropriate prophylaxis, but if the mother is only HBs positive the risk of transmission is about 20 %.

90% of infected infants will become HBV carriers and 25% will ultimately develop a good morbidity rate from hepatitis B related disease.(9)

Horizontal transmission occurs to the family, friends and close contacts. The mechanism is not fully understood, but the vehicle is a small amount of infected saliva or blood contacting an open wound which may be a small abrasion.(10)

Also hepatitis B is considered to be a sexually transmitted disease (STD). Blood from minor lesions, semen and vaginal secretions are considered to likely be positive. The number of sexual partners, the number of years of sexual activity and a history of other sexual transmitted diseases have an increased risk of HBV infection.(11)

Another way of horizontal transmission is via HBV-contaminated blood and blood products, contaminated surgical instruments and other hazards.

The large majority of HBs-Ag carriers have normal function tests (75-90%), 1-5% develop chronic active hepatitis and the

remaining had chronic persistent hepatitis.(13) About 20% of individuals with chronic active hepatitis B progress to cirrhosis. (14)

In patients with cirrhosis, the annual incidence of hepatocellular carcinoma ranges from 2% to 7%.

So as we can see from our study before the era of vaccination Jordan (Tafelah and Zarqa) have an intermediate endemicity rate of chronic hepatitis B carrier status. This chronic asymptomatic carriage can be prevented or decreased by vaccination. The vaccine is highly immunogenic, the sero-protection rates are greater than 95% after a 3-dose vaccine course, and the protection lasts for at least 8-10 years, even though the presence of antibodies would continue to provide protection against HBV infection.(15)

The most important aspect is the protection of newborn babies by giving the vaccine and the immunoglobulin as soon as possible after birth, and this can be achieved only by detecting the carrier mother before delivery as our patient's mother was neither screened nor vaccinated for hepatitis B.

CONCLUSION

It is apparent that vaccination of children under one year of age would be the most effective way of decreasing the prevalence of Hepatitis B in accordance with the Expanded Program on Immunization (EPI).

Also we recommend a routine screening for the pregnant women as a part of antenatal care, and vaccination for HBs-Ag negative mothers, and immediate vaccination for newborns of carrier mothers as soon as possible after birth. (12)

no	age	sex	history	LFT	Hepatitis profile	Family screening
1	8yrs	male	History of surgery to scrotal cyst 3 years ago	normal	HBs-Ag positive	negative
2	9 yrs	male	History of dental extraction	normal	HBs-Ag HBe-Ab (IgM) positive	Negative
3	13 yrs	female	History of hospital admission for 15 days due to F.U.O	normal	HBs-Ag HBe-Ab (IgM) positive	
4	12 yrs	female	No history of illness	normal	HBs-Ag positive	Negative
5	8 yrs	male	Negative for himself, his mother has a history of blood transfusion	normal	HBs-Ag positive	Mother and one sister is positive, the father , brother and one sister are negative
6	10yrs	female	She had a history of blood transfusion	normal	HBs-Ag positive , and CMV positive	negative
7	7 yrs	male	No relevant history discovered accidentally during investigation to anemia	Mild elevation of ALT and AST	HBs-Ag positive only	Negative
8	5 yrs	female	History of acute hepatitis b infection 6 months ago	LFT back to normal	HBs-Ag positive	The mother is positive one sister and one brother are positive, one sister and the father are negative

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Total Quality Management for Turkish Primary Care Current Status and Suggestions

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ABSTRACT

There is a worldwide improvement in health care and quality systems. Quality is a very important issue for primary care, which is the initial step in health care. Total quality management (TQM) is one of the most common quality systems, which can be applied in the health sector. There is also an effort to develop Turkish primary care. In this article, information about TQM will be given and the current status including defects in the Turkish primary care system and possible solutions should be discussed.

INTRODUCTION

The diagnosis, therapy, rehabilitation, and prevention of diseases and promotion of public health can be considered as health care services (1). Health care centres or institutions provide the health care. Health care is a special situation which has to be given immediately and cannot be delayed. Depending on the caregivers' who are working and the patients, the tolerance margin can be very low. As health requirements differ from one person to another, the health workers' jobs become harder.

Health care services have to be not only easy to access and use, but also must be qualified, patient-centred, continuous, productive, professional, and standardised. Caregivers are accepted as inner customers, and their requirements should be regarded; they should receive adequate payment and be managed effectively (1).

We can consider health care as a three-step process (1). The initial step is primary care (PC), which includes preventive, diagnostic, and treatment properties as well as continuous care. It is easily accessible and cost effective. Secondary care (SC) includes diagnosis and treatment, which is not available in PC. Tertiary care (TC) is used for diagnosis and treatment that cannot be performed in PC or SC. Only the patients who require more detection should be examined in TC.

Therefore, primary care services have to address the majority of the community needs. In a study (2), 94% of American patients value the role of a primary care physician (PCP) as a source of first-contact care, and 89% value the PCP as a referral coordinator. In that survey, considering the specific medical problem, 75% to 91% of the patients generally prefer to seek care initially from their PCPs rather than specialists. In Germany, patients' perceptions of the quality of the doctor-patient relationship along with trust and confidence in their PCP are found to be very important preferences (2).

There is another important point which should not be missed in accessing the health care services--the financial aspect. If a doctor misses the diagnosis in the PC, the cost will be higher, or, if the patient uses TC first, then the cost will also be higher (1). Especially in a developing country like Turkey, the financial aspect becomes much more important.

WHAT IS TOTAL QUALITY MANAGEMENT?

There is a real improvement in the concept of quality all over the world, especially in health care systems. Today, physicians are facing increased demands to improve patient care and are forced to find solutions for health care delivery problems. In the last decades, the quality of health care has become an important issue worldwide (3).

Quality has some basic principles like proficiency, being reachable, efficiency, productivity, continuity, reliability, and satisfaction of both the staff and the customer (4, 5, 6). The importance given to quality improves day-by-day, and a wide standardisation and qualification effort is spreading around the world. One of the most important concepts of quality is "Total Quality Management" (TQM).

This approach began in the production sector, and it spread quickly to other sectors. TQM methodology is based on promoting health care quality and minimising cost and losses (4). Top management commitment to TQM drives participation at all levels within an organisation to get involved in every step of the process and to fulfil the requirements of TQM.

In health institutions, qualified service and care requires determining the current level of quality, continuous improvement, distributing the responsibilities and activities, satisfying both the inner and outer customers (staff and patients), informing society, labour division, and continuous education in every step and field (4).

In order to be successful, the needs and expectations of the customers would be known. Service or care must be produced and served at minimum cost and maximum quality. TQM focuses on the quality, customer, and process. Every step in the TQM process has to be controlled continuously. The TQM process is a scientific process to help develop the people, improve society, and prevent mistakes before they occur (7). According to Asubonteng et al., TQM in health care comprises a number of strategies which are very important to improve quality and reduce costs, for example "customer needs, standardization, striving for zero defect, reducing outcome variability, eliminating the cost of poor quality, using statistical methods to identify and monitor processes and continually working for improved quality" (8). They suggest to apply "top management leadership, corporate framework, customer focus, employee education and training, benchmarking, quality measurement, recognition and reward and integration with the process" in order to implement TQM in primary health care.

CURRENT STATUS OF TURKISH HEALTH CARE SYSTEM

Primary care has been served by government in PC centres in Turkey since the Socialization Law in 1961, but day by day many problems began to occur and the quality and efficiency problems of Turkish PC oblige the patients to seek SC and TC initially at hospitals (9,10,11). Although some interventions have been tried, the Turkish primary health care system is still not working efficiently (12, 13).

After completing the six-year-basic education and graduating from medical school, Turkish medical students have to pass a national examination in order to become a specialist. Otherwise, they must deal with patients in PC centres without any postgraduate education. Without specialization, they are called "practitioners." There are also PC physicians who have at least three-year-postgraduate education -called "Family Physicians", including about 800 family medicine specialists and 600 family medicine residents in Turkey. They are employed to work in PC centres and in SC and TC hospitals. A few of them are working in the private sector, also. Other specialty groups are working in SC or TC hospitals or the private sector. In general, our students feel unprepared to work in PC after graduation; many expect to enter hospital-based specialties and are inclined to specialise in order to work in PC (14, 15, 16, 17). We can say that both students and patients, or the community in general, are unwilling to participate in and do not rely on PC in our country.

DEFECTS AND POSSIBLE SOLUTIONS

- Insufficient and inadequate use of resources, considering the efficiency and productivity, increases the expenses. High cost, neglecting the importance of health care, insufficient budgets, poor resource allocation, considering health care as a consumption sector; and inadequate policies, damage the health care system and create a large imbalance (18). The Turkish government should have audit responsibility. TQM concepts need participation by the top management in every step, so these kinds of defects can be solved by the TQM process.

- Although they are employed by the government, caregivers should not be considered as government officials. Difficult and longer working hours, hard working conditions, and a specific mission that cannot accept any mistake or inattention, put the caregivers into another profile (19). This can also be solved by TQM as caregivers will be considered as "inner customers". The "inner customer satisfaction" is very important in TQM as it can

cause "outer customer satisfaction" (7). Professional satisfaction can lead them to more effective and productive working and this provides a more qualified service and care for patient satisfaction.

- There are adequate numbers of PC centre doctors (20). However, there is no efficient and sufficient associate staff and equipment in care giving and the medical education system needs to be changed to train students for PC. TQM gives great importance to education, and continuous education in TQM is needed to solve this defect.

- An efficient registry system has to be established for the entire country. Feedback is not possible for patients who are forwarded to SC and TC (21). Family medicine applications also need a good registry system. TQM provides standardisation and registration in every step, which is needed to resolve this defect.

- Patient satisfaction can be obtained after a qualified PC has been established. Efficient PC also has a positive effect on SC and TC and prevents needless waiting in hospitals (18). In our opinion, if an effective family medicine system using TQM concepts can be established, improvements will come spontaneously. In Cuba, for example, teams consisting of a family physician and a nurse have reduced hospital applications by 18% during 1985-90 (18).

- Turkish medical education needs to be revamped, and we must diminish the contingent of the medical schools (Every year about 5000 medical students graduate from 47 schools, it is much more than needed (20)). The education system of the associate staff must also be revamped (21). Education of all staff is a necessity in TQM, so TQM concepts would resolve this defect.

CONCLUSION

Transition to TQM will be difficult if a new, more effective PC system cannot be properly established. With governmental support, the transition period can be easier (22). If TQM becomes a governmental policy, it can be applied to all sectors. Although it would be difficult to apply in many areas at the same time, pilot centres and regions could be chosen in order to improve success. It must be understood that implementing the TQM principles will take a long time.

Although we are encouraged to know that the TQM approach has considerable influence in many Western countries and particularly in Western hospitals (23), we must create our own PC system model instead of copying other countries. Arranging the quality management teams according to specific needs, can simplify auditing and counselling.

The TQM process helps us to understand the needs of the staff and the patients. If a quality concept is applied in an entire area and the population is informed, implementation will be easier. It should not be forgotten that temporary solutions only last for short periods; if we want permanent solutions, we must first identify the reasons so that we can then solve the problems. We should also keep in mind that we need continuous education in all the areas of the health care. If we can establish a good model for TQM in primary health care, it can lead us to be successful in the other steps.

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Vaccination Practice in Saudi Arabia: Is It Safe?

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ABSTRACT

A pre-stratified systematic random sample of 836 children of less than 2 years was selected in 6 primary health care (PHC) centers in Qatif district. Companions were instructed to monitor adverse events for 3 consecutive days following diphtheria, tetanus and pertussis (DTP) immunization. There was one or more adverse events (AE) noted in 96.9 % vaccinees. Local reactions at the injection site were reported in 91.7%. Systemic reactions including fever, prolonged crying, vomiting, and hypotonicity were reported in 79 %, 24.3%, 9.9% and 1.1%, respectively. Behavioural reactions including sleepiness, anorexia and fussiness (irritability) were reported in 42.2 % of vaccinees. High fever, severe swelling and severe redness occurred in 5 %, 1 % and 1 % of cases, respectively. No serious adverse events were noted.

In conclusion, incidence and nature of AE following DTP are similar to those of internationally reported figures. No cases of local abscess were reported. This reflects a comparable safety of vaccination practice in Saudi Arabia.

INTRODUCTION

Saudi Arabia has achieved, during the last three decades a tremendous achievement in terms of basic vaccination coverage.¹ This has been carried out, mainly, by structured vaccination programs delivered, mainly, through a wide network of primary health care centers.

However, a debate is rising about the safety of this program, especially, in the absence of effective surveillance of adverse events.

This study was undertaken to survey the adverse encounters following DTP vaccination and to compare them with the internationally published figures.²⁻¹³ This comparison may serve as an indicator for safety of the practice.

In Saudi Arabia, the incidence of such reactions related to licensed vaccines has not been determined before.

METHODOLOGY

A population of more than 350,000 individuals is served by 26 PHC centers in Qatif District. All of these centers provide vaccination services for whole population in their assigned catchment areas. A total number of 18,898 doses of DTP vaccine were given to children 0 to 2 years old, in the year preceding the study.¹⁵

A weighted, systematic, random sample of 6 (23%) PHC centers were chosen after stratification by the total number of doses of DTP vaccine given in the year preceding the study, in each center.

In each sampled center, one out of four Saudi infants and children aged 0 to 2 years routinely attended for DTP vaccination, and were included using systematic random sampling, in the period from 2 Sep 2000 until 1 Sep 2001.

Informed consent was obtained from parents or companions to conduct the surveillance of adverse events following immune-

isation (AEFI.) A leaflet was handed to the companion for introduction of the study, as well as instructions for monitoring AEFI. Companions who refused to be included in the study were not replaced.

A study nurse filled a basic data questionnaire (no. 1) at the time of vaccination. The questionnaire contained 37 elements about demographic data, type of feeding, past and present medical history, weight, temperature, previous AEFI, education level of the mother, dose number of DTP, experience of vaccine provider, timing of vaccination, site of vaccination, needle size and manufacturer, any medication given pre or post vaccination, and any massage given to the child post vaccination. Preferable timing of phone calls was agreed upon with the companion.

The companion was asked to monitor the child for fever, change in mood and behavior, general appearance, and local reactions for 3 days post-vaccination. A study nurse telephoned, daily, each family for 3 consecutive days, interviewing the mother or the guardian for AEFI in the preceding 24 hours and completing a questionnaire (no. 2.) This questionnaire contained 24 elements about occurrence of local and systemic AEFI as defined by the WHO 10, their temporal occurrence and period. Any visit to medical services for this purpose was traced, as well as the use of local applications or antipyretics.

Non-responding telephone calls were repeated, at least twice on the same day, or in the next few days, to inquire about AEFI.

One fourth of the sample was directly observed by a study nurse, to validate the observations of the mother or the guardian. For this purpose, companions were told to visit the PHCC the day following the day of vaccination.

A pilot study of the surveillance was held in a different PHCC in the Qatif area for one month. Questionnaires and methodology were modified accordingly.

Study nurses and physicians were trained on collection of data. Study PHC centers were visited frequently, to solve any obstacle facing data collection. Study nurses had frequent meetings collectively with the authors to share the experience with each other and get guidance from the authors. Data filling was verified twice by the authors.

Data were coded, entered and analyzed by the authors using SPSS package, version 10.

Data collection was interrupted in one PHCC for 6 months due to administrative obstacles in that center.

Schedules of vaccination are predetermined as per the Saudi MOH guidelines for vaccination.

Non-Saudis were excluded, due to difficulty to contact by phone and language barrier. However they constitute a small fraction of the vaccinee in Qatif.14.

Vaccine used was adsorbed diphtheria, tetanus, and pertussis vaccine, Pasteur Merieux SV. It was licensed and supplied by the MOH.

RESULTS

A total number of 4,457 injections of DTP vaccine were given to children, age 6 weeks to 2 years, in the selected six PHC centers in the period of the study out of which, 836 (18.8%; 397 females and 439 males) had been enrolled in the study. However, post vaccination clinical reaction data were collected for 749 (89.6%) injections; 47.3% of them were female. The remaining 87 (10.4%) injection recipients did not respond to repeated phone calls or had out-of-service phone lines. They did not differ, significantly, in their basic demography as well as the DTP dose.

All recipients were given one of four primary immunizations, given usually to children below 2 years of age. The number of injections given as 1st, 2nd, 3rd and 4th dose were 183 (24.4%), 182 (24.3%), 196 (26.2) and 188 (25.1), respectively. The dominant ages of recipients in each dose were 6 to 8 weeks (96.1%), three months (93.4%), five months (94.9%) and 18 months (90.8%), respectively. Trivalent oral polio vaccine and hepatitis b vaccine were simultaneously given to all and 24.1% of recipients, respectively.

The data were collected from mothers in 93.7% of the cases. Their level of education was high school or above in 429 (57.3%), while illiterates constituted 3.9%.

There was one or more AE noted following injections in 726 (96.9%) vaccinees. Local, systemic and behavioural reactions were reported following 687 (91.7%) injections, 619 (82.6%) injections, and 316 (42.2%) injections, respectively. These were further described in Table 1.

No anaphylactic reaction, anaphylactoid reaction, hypotonic hypo-responsive episode nor DTP-associated convulsion occurred. However, hypotonicity, alone, has been reported in 8 (1.1%) cases.

Incidence of excessive crying is shown in details in Table 2.

Perceived high fever and severe swelling and redness (circumferential) each occurred following less than 5% , 1%, and 1%, respectively. No abscess was reported at injection site.

Table 3 presents the temporal occurrence of AEFI with DTP vaccine. The majority (93.4%) of AE were reported in the first 24 hours following immunization.

Eight recipients had consulted a physician within the first 24 hours. Five were for fever; one for induration and redness; one for runny nose; and one for sleepiness.

DISCUSSION

Safety of vaccination practice has been questioned, and many effects have been proposed, such as lower or higher incidence of known AEFI, or the presence of unusual AE.

DTP vaccine was chosen for this purpose for many reasons. The first is that DTP-associated reactions are well studied and published in the literature, over the last fifty years. 1-9,11,12,15,17-20 Secondly, DTP is the most frequently administered vaccine to children.

In this study, identification of findings was made primarily via the caregiver. Daily contact to the caregiver might ensure reporting of adverse events of short duration that might take place. It might be argued that the caregiver might not be educated enough to report reliable data. However, no significant differences were noted between different educational levels in reporting adverse events, as shown in Table 1. On the other hand, similar methods of reporting have been used previously by many researchers.1-4,8,21

On the other hand, quantifying adverse events objectively is difficult, resource consuming, and does not cover the whole period post immunization. Adverse events, in our study, occurred throughout all time intervals in the first forty-eight hours following immunization, and were of brief duration.

The compliance rate, in this study, was high, approaching 90% of vaccinees involved.

The vast majority (91% - 96%) of them were age-appropriately immunised. Age was constant in more than 90% of each dose. This makes differentiation of incidence of AE on age not possible.

More than 96% of DTP vaccine recipients had some effect of immunisation noted. This is comparable with incidences of 93% - 96% reported in other studies. 2,25

On the contrary, few studies and reports have shown significantly lower incidence of adverse events.1,4,5,8,12,21 These differences are attributable to different methodologies or being retrospective or, merely passive reporting. Many other variables however, might add to these differences. These include differences in vaccine preparation, batch numbers, age of the child, dose schedule, and degree and timing of observation.

Most adverse events occurred in the first twenty-four hours. The majority of them were in the first six hours. These figures are comparable with similar results shown by Long and colleagues in northern America.

Local reactions were more frequent than fever, other systemic effects, and behavioural effects, in this study, and in other studies, as well.2,3,8,11

Serious adverse events, including seizures and encephalopathy were not noted. The absence of any seizure might be attributed to an insufficient sample size to trace such events, which were estimated to be less than one in every 1500 recipients.3,11

However, few studies have described similar results to this study, in higher sample size, even.2,22 Permanent neurological damage is however much less in prevalence and not within the scope of this study. It has been reported to occur once in 32,000 to 1.24 million doses. 9,11,24

Prolonged crying, defined in this study as excessive continuous crying or screaming, occurred after 24.3% of injections, while few other studies have described non-specific definition after 30 to 63% of injections.²⁵⁻²⁷

According to our definition, crying for more than 30 minutes and crying for more than 3 hours occurred in our study, after 2.9% and 0.8% of injections, respectively. These figures are comparable with other studies that showed incidence of 2 to 6% and 0.1 to 3%, respectively.^{3,28}

Series number of DTP dose appears to affect the incidence and type of AE. Fever, local swelling and redness, anorexia, fussiness, and hypotonia occurred maximally after DTP4, with

slight decrease in their incidence after DTP2. These findings are comparable with similar findings in other studies.^{2,3,23,25,27.}

CONCLUSION

Incidence and nature of adverse events following DTP vaccination in Qatif PHCC are similar to internationally reported figures. They are common, and worth considering by health workers, in order to orient caregivers for their possible occurrence at time of vaccination.

The absence of any serious AE might necessitate a larger sample size to be traced.

Table 1. Number of DTP recipients who manifested AEFI with their corresponding dose number

	DTP- 1 st		DTP- 2 nd		DTP- 3 rd		DTP- 4 th		All doses		p ^{**} (dose)	p ^{**} (sex)	p ^{§§} (edu)
	n	%	n	%	n	%	n	%	n	%			
Local													
Swelling	104	56.8%	104	57.1%	113	57.7%	119	63.3%	440	58.7%	0.534	0.357	0.07
Redness	98	53.8%	94	51.6%	106	54.1%	109	58.0%	407	54.4%	0.668	0.258	0.08
Pain	160	87.4%	144	79.1%	155	79.1%	170	90.4%	629	84.0%	0.002 *	0.088	0.445
Any Local AE	168	91.8%	162	89%	178	90.8%	179	95.2%	687	91.7%	0.149[§]	0.233[§]	0.059
Systemic													
Convulsion	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	NA	NA	NA
Hypotonicity	1	0.5%	2	1.1%	2	1.0%	3	1.6%	8	1.1%	0.799	0.424	0.648
Prolonged crying	46	25.1%	47	25.8%	49	25.0%	40	21.3%	182	24.3%	0.727	0.100	0.787
Rash	4	2.2%	4	2.2%	4	2.0%	0	0.0%	12	1.6%	0.071	0.101	0.754
Wheezing	7	3.8%	2	1.1%	6	3.1%	2	1.1%	17	2.3%	0.166	0.592	0.958
Vomiting	17	9.3%	18	9.9%	26	13.3%	13	6.9%	74	9.9%	0.219	0.359	0.222
Fever	130	71.0%	143	78.6%	161	82.1%	158	84.0%	592	79.0%	0.013 *	0.114	0.546
Any Systemic AE	141	77%	147	80.8%	167	85.2%	164	87.2%	619	82.6%	0.045[§]	0.699[§]	0.212
Behavioural													
Sleepiness	68	37.2%	58	31.9%	47	24.0%	46	24.5%	219	29.2%	0.013 *	0.374	0.357
Anorexia	27	14.8%	29	15.9%	39	19.9%	41	21.8%	136	18.2%	0.248	0.211	0.145
Fussiness	20	10.9%	28	15.4%	28	14.3%	29	15.4%	105	14.0%	0.545	0.098	0.941
Any Behavioural AE	90	49.2%	81	44.5%	74	37.8%	71	37.8%	316	42.2%	0.067	0.657	0.351
Any AEFI	177	96.7%	173	95.1%	189	96.4%	187	99.5%	726	96.9%	0.093[§]	0.956[§]	0.765

* Statistically significant. ** Kruskal Wallis test. § chi square tests. §§ Mother's Education Level. NA Not Applicable

Table 2. Incidence of excessive crying after DTP vaccination

Duration of crying	n	%
≥ 3 hours	6	0.8
30 minutes – 3 hours	22	2.9
≥ 30 minutes	28	3.7
< 30 minutes	152	20.3
Non-specific	182	24.3

Table 3 : Number of DTP recipients who manifested AEFI with their temporal occurrence.

AE	0-6 h	7-12 h	13-24 h	1 st Day*	2 nd Day	3 rd Day
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Local Pain	426 (67.7)	119 (18.9)	52 (8.3)	619 (98.4)	10 (1.6)	0

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Change in Medical Students' Opinions and Attitudes Towards Mental Illness

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Key words: Mental illness, medical students, attitudes, stigmatization

ABSTRACT

Objectives: To determine the opinions and attitudes of first and final year medical students towards mentally ill patients; to compare the attitudes of the two groups to see the effects of medical education and confronting of the patients, and to evaluate the stigmatization of the mentally ill by future medical professionals.

Methods: A questionnaire comprising 19 questions regarding opinions and attitudes towards mental illness was administered to the first and final year medical students.

Results: There were 308 students who filled out the questionnaire, which was 81% of the total of the first and final year students (n = 388). Observation and talking were the most common preferred choices in both of the groups, for recognizing a psychiatric patient (First year 55.1%; Final year 70.8%). The final year students felt more indifferent, less fear, and less compassion when they saw a psychiatric patient.

Conclusions: It appears that there is stigmatization of mentally ill patients even among medical students, which could be decreased with the addition of lessons on stigmatization of mentally ill patients and more social intercourse with the patients.

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INTRODUCTION

The one-year prevalence of any psychiatric disorder was reported as 28.1% in the USA. The one-year prevalence for some of the mental illnesses are as follows; unipolar major depression 5.0%, panic disorder 1.3%, schizophrenic/schizophreniform disorders 1.1%, cognitive impairment 2.7%, any alcohol disorder 7.4%, any substance use disorder 9.5%. The lifetime prevalence rates of these diseases are almost twice the one-year prevalence (1). In recent years, there has been a revolutionary change in the systems of care and treatment devised for mentally ill patients that has involved a movement away from institutional care, towards greater involvement in the community (2). An increased need for the rehabilitation of mentally ill subjects was prompted by the worldwide movement of deinstitutionalisation. Individualized rehabilitation must be in mutual interaction with the social and occupational environment.

The objective of rehabilitation is to enable the patients after their recovery, to acquire their former social and occupational status and to help the disabled and handicapped to achieve the maximum in health, work competence, occupational and social integration and quality of life (3). However, numerous studies show the persistence of negative attitudes of the public towards the mentally ill. In spite of the insertion of psychiatry in the community, stereotypes and stigmatization of psychiatric patients did not change accordingly (4,5). An important gap exists between the beliefs of the population and present psychiatric knowledge (4). Studies about population attitudes

towards mentally ill show that people are afraid of mentally ill patients, would not employ them, would not marry them, would not establish any relationships with them, and mentally ill patients are considered as violent (6).

Stigmatization of mentally ill patients has negative effects in their rehabilitation. In this regard, the attitudes towards mentally ill patients, especially the attitudes of health professionals, which might play a major role as a model to public attitudes, could be a major factor in defining the quality of the future life of the mentally ill. The aim of this study was to determine the opinions and attitudes of first and final year medical students towards mentally ill patients, and to compare the attitudes of the two groups to see the effects of medical education and confronting the patients, and to evaluate the stigmatization of the mentally ill by future medical professionals.

SUBJECTS & METHODS

The study was carried out during May 2003, in Erciyes University Medical School, Kayseri, Turkey. There are 40 medical schools in Turkey, and Erciyes University Medical Faculty is one of the oldest schools, which was founded in 1968. Kayseri is a trade center in central Anatolia, and has a population of 536,000.

A questionnaire comprising 19 questions was designed by using the structure used by former studies regarding the attitudes towards mentally ill (7,8). The questionnaire was administered

to the first and final year medical students. There were 204 first year and 184 final year medical students, and there were 1,281 students in total in the medical school. The duration of medical education is six years. The first year medical students have 42 hours of psychology (behavioral sciences) lessons. The third year medical students have 15 hours of psychiatry lessons. The fifth year medical students have 18 days of psychiatry clerkship with 45 hours of lessons. The final year medical students are studying at psychiatry wards and clinics for one month.

SAMPLES

The questionnaire was collected immediately after it was filled out. There was no information given to the students about the diseases in order not to affect the current points of view of the students. The names of the students were not written on the questionnaire in order to make the students feel comfortable in filling out the form.

There were 308 students who filled out the questionnaire. The response rate was 81% of the total group. One hundred and forty seven were first year and 161 were final year medical students. Of the first year students, 43.5% (64/147) were female and 56.5% (83/147) were male. Of the last year students 50.3% (81/161) were female and 49.7% (80/161) were male. The mean age of the study group was 22.4 ± 2.8 .

The questionnaire consisted of two parts. The first part had thirteen general questions about the attitudes towards mentally ill patients (Table 1) (7). In the second part of the questionnaire, eight opinions about six mental illnesses: severe depression, panic disorder, schizophrenia, dementia, alcohol disorder, and any substance use disorder were asked (Table 2) (8).

The questionnaire was administered to five first year and five final year medical students to perform a pilot study. No change in the questionnaire was required due to the results of this study. The questionnaire was administered to both of the years at the end of the year when the lessons of the first year students were completed and the last year students were about to complete their studies at the psychiatry department. Medical students who are members of 'the scientific research group of psychiatry' delivered the questionnaire. The sample can be considered representative of the students of our medical schools, however we cannot say that the group represents all of the medical students in Turkey.

STATISTICS

Statistical analysis was performed using SPSS statistical package (Version 11.0, SPSS Inc., Chicago, IL, USA) for Windows. Chi-square tests were used to determine the differences between the groups. The level of statistical significance was set at $p < 0.05$.

RESULTS

The last year students met and talked with psychiatric patients more than the first year students (Table 3). The difference of answers about recognizing a psychiatric patient was statistically significant ($p < 0.001$). Observation and talking were the most common preferred choices in both of the groups for recognizing a psychiatric patient.

The final year students felt more indifferent (17.5%), less fear (5.6%), and less compassion (13.1%) when they saw a psychiatric patient ($p < 0.001$). Most of the students of both groups tended to continue their relationships with a friend who had a psychiatric disease. There was no statistically significant difference between the choices of marrying a psychiatric patient of the two groups, where 91.6% of the first year and 88.0% of

the last year medical students do not want to marry. Most of the first year (71.4%) and the final year (74.3%) medical students thought that psychiatric patients could hurt someone. In both of the groups (first year and final year students), hospitals (15.6% vs. 12.5%), care houses (19.0% vs. 5.0%), together with the other people (25.1% vs. 28.7%) and multiple choices (23.1% vs. 32.5%) were stated for places psychiatric patients should live. The final year students would give a job to a mentally ill patient, more than the first year students ($p = 0.030$). There was a difference as well between the students who knew a psychiatric patient and the other students, in giving a job, where the ones who knew such a patient would give them a job with a higher percentage ($p = 0.009$). The percentage of students who said that they did not hesitate in examining a psychiatric patient was not statistically significant.

In a question where multiple choices could be marked, the first year medical students mainly thought that psychiatry patients were strange (22.4%), unforeseeable (24.4%), strange and unforeseeable (25.8%). The final year medical students also thought that these patients were strange and unforeseeable (18.6%), and unforeseeable (31.0%). Seventeen first year students (11.5%) and 30 (18.6%) of the final year students defined psychiatric patients as 'like everyone else'. Forty-seven (31.9%) of the first year medical students stated that the causes of psychiatric diseases are due to life experiences, 43 (29.2%) due to genetic factors and life experiences, and 34 (23.1%) to both genetic factors, life experiences and organic reasons (multiple choices could be marked). The final year medical students evaluated the causes of psychiatric diseases as: 94 (58.3%) due to genetic factors, life experiences and organic reasons, 20 (12.4%) to genetic factors and life experiences, and 13 (8.0%) to genetic factors, life experiences, organic reasons and other reasons. Ten (6.8%) students from the first year and 11 (6.8%) students from the final year evaluated the causes as life experiences and organic factors.

When the diseases were separately evaluated, there were more differences between the first and last year students on evaluating mentally ill patients (Table 4). The final year students stated that patients suffering from severe depression as less 'dangerous to others', more 'unforeseeable', 'blame themselves' more, and 'can take care of themselves' less. The opinions of the two groups are almost totally different for panic disorder, where the final year students stated that they were less 'dangerous/aggressive', more 'unforeseeable', not 'hard to communicate', 'blame themselves' less, 'can take care of themselves' more, and 'harm themselves' less. The evaluation of schizophrenia patients was very different as well, where the final year students thought that they were more 'dangerous', 'harder to communicate', 'can take care of themselves' less, 'never cured' more, and 'harm themselves' more. The differences were less in the evaluation of dementia, alcohol disorder, and any substance use disorder. The final year students thought that dementia patients 'blame themselves' less, 'could take care of themselves' less, and 'not cured' more. The only difference for alcohol disorder was that the last year students thought that they 'blame themselves' more. For any substance use disorder, the final year students thought that they are more 'unforeseeable', and 'blame themselves' less.

DISCUSSION

It was an expected result to see that the final year students knew, met and talked with psychiatric patients more than the first year students, due to the medical school curriculum. The final year students felt more indifferent, less fear, and less compassion when they saw a psychiatric patient. When the diseases were separately evaluated, there were more differences between the first and last year students on evaluating mentally ill patients.

There are some limitations in this study. The first limitation of this study was not to administer the same questionnaire to the same student group after 6 years training. The second limitation was that the demographic properties of the study groups were disregarded, because the main aim was to see the changes caused by the education given throughout the medical school years. General questions on mentally ill patients were not separately asked for neurotic patients and psychotic patients in order to compare the results with the present literature data.

Although there are studies regarding the attitudes towards mentally ill patients (4-8), we could not find a study on the attitudes of medical students. Blizard has found no differences in the attitudes towards the mentally ill patients between university students and the rest of the community (9,10). However, it is possible to expect some differences with the attitudes of the community and the medical students, especially the final year students.

Vezzoli et al. have reported in a community study 52%-70% who have talked with psychiatric patients and 21%-45% who often meet with psychiatric patients (7). This is compliant with the final year students' percentage, which declare that they frequently meet and talk with psychiatric patients.

It has been reported in various studies that family therapy is better than conventional treatment and individual therapy when relapse rates are considered (10-12). In our study group, we could not get satisfactory answers about deinstitutionalisation of the psychiatric patients. This is probably due to the ideas of students that psychiatric patients are dangerous/aggressive, not cured with treatment, which is stigmatization.

Vezzoli et al. have reported that students and the unemployed would give psychiatric patients a job (86%), whilst the self-employed were less willing (57%) (7). In this study, last year students would give a job compliant with the self-employed (Table 3). This may not be attributed only to negative opinions whilst some of the patients cannot actually work properly.

Crisp et al. have reported in a community study that 62% of the respondents rated people with severe depression as hard to talk to, 19% responded that they could pull themselves together, 23% that they would not eventually recover, and 23% that they are dangerous to others, yet only 16% thought that they would not respond to treatment (8). In this study, the medical students think that it is harder to communicate with patients suffering

from severe depression, probably because they have to take a detailed history of the patient. The ideas of the medical students about being not cured are less (First year: 9.8%, final year: 8.8%) when compared with the 16% in Crisp et al.'s study. It is possible to say that social intercourse and more work experience with psychiatric patients have made a change in how the final year students feel about the patients. Feeling indifferent and having less fear can be considered as a positive change in the evaluation of the patients from the point of view of doctor-patient relationship. Having less compassion for a patient can be unimportant as a medical professional, but this must not lead to disregarding and bad manners towards the patient, and loss of empathy for the patient.

Objection of marrying with a psychiatric patient cannot be considered as stigmatizing the mentally ill patients, but a normal manner for protecting themselves. Some of the psychiatric patients can be dangerous and aggressive during the course of the disease, but this does not mean that they are always dangerous and aggressive. This condition must not lead to the stigmatization of the patients.

It might be expected to see that none or nearly none of the final year students would hesitate to examine a psychiatric patient. Confronting the mentally ill patients has made the final year students think that less of the patients are strange, but more of them are unforeseeable. We might expect to see more of the final year students stating that psychiatric patients are like everyone else, but probably due to considering only the psychotic patients, there is no difference between the two groups for this item.

CONCLUSION

It is possible to say that medical education changes the opinions and attitudes of medical students in a positive way. For many mentally ill persons stigma has emerged to be a 'second illness' (4). Health professionals can also stigmatize psychiatric patients. Nevertheless, there are still some obstacles in the approach to the psychiatric patient, like hesitation of the examination of psychiatric patients. There is stigmatization of psychiatric patients among medical students as well as there is in the community, which could be overcome with more frequent social intercourse among the medical students and the psychiatric patients. According to the results of this study, it might be an effective intervention to insert lessons regarding the stigmatization of the patients into the medical curriculum.

Table 1. Attitudes Towards Mentally Ill Patient Questionnaire*

Item	Answers
1. Do you know a psychiatric patient?	Yes, No
2. Have you ever met and talked with a psychiatric patient?	Yes, No
3. How do you recognize that a person is a psychiatric patient?	By observation, talking, impossible, others
4. Have you ever worked with a psychiatric patient?	Yes, No
5. What do you feel when you see a psychiatric patient?	Indifference, fear, curiosity, compassion, others
6. Would you continue your relationship with a friend who is a psychiatric patient?	Yes, No
7. Would you marry a psychiatric patient?	Yes, No
8. Do you think that a psychiatric patient can hurt someone?	Yes, No
9. Where should psychiatric patients live?	Psychiatry hospitals, care houses, together with the other people, others
10. Would you give a psychiatric patient a job?	Yes, No
11. Do you hesitate examining psychiatric patients?	Yes, No
12. What do you think about psychiatric patients?	Dangerous/aggressive, like everyone else, strange, unforeseeable, others
13. What are the causes of psychiatric diseases?	Genetic, life experiences, organic causes, others
* Modified according to Vezzoli et al (7).	

Table 2. *Opinions Regarding Mental Illnesses Questionnaire* *

Mental illnesses	Opinions	Answers
Severe depression Panic disorder Schizophrenia Dementia Alcohol disorder Any substance use disorder	Are dangerous to others Unforeseeable Hard to communicate Blame themselves Can take care of themselves Not cured with treatment Never cured Harm themselves	Yes, No
* Modified according to Crisp AH et al (8).		

Table 3. Association between general questions' evaluation and the medical school years

Items	% of students and year of medical education		χ^2	(p-value)
	First (n = 147)	Last (n = 161)		
Know				
Yes	42.5	92.5		
No	57.5	7.5	86.46	<0.001
Met and talk				
No	51.3	2.5		
Rarely	39.7	43.1		
Frequently	7.5	45.2		
Others	1.3	8.8	107.44	<0.001
Recognise				
By observation	12.2	2.5		
Talking	19.5	11.2		
Impossible	4.0	0.6		
Others	0.6	3.7		
Multiple choice	63.9	81.8	6.63	<0.001
Work				
Yes	9.2	43.1		
No	90.7	56.8	43.32	<0.001
Feel				
Indifference	10.8	17.5		
Fear	17.0	5.6		
Curiosity	44.9	41.8		
Compassion	17.6	13.1		
Other	8.2	21.2	19.813	<0.001
Relationship				
Yes	80.0	87.7		
No	20.0	12.3	2.661	=0.103
Marry mental patient				
Yes	8.4	11.9		
No	91.6	88.1	0.650	=0.420
Mental patients hurt someone				
Yes	71.1	74.3		
No	28.9	25.7	0.364	=0.546
Mental patients should live in				
Hospitals	15.6	12.5		
Care houses	19.0	5.0		
Together with the other people	25.1	28.7		
Others	17.0	21.2		
Multiple choice	23.1	32.5		
Give a job				
Yes	46.9	60		
No	53.1	40	5.002	=0.025
Hesitate examining mental patients				
Yes	12.9	19.5		
No	87.0	80.5	1.956	=0.162

Table 4. The percentages of the answers given to questions regarding severe depression, panic disorder, schizophrenia, dementia, alcohol disorder, and substance use disorder.

	Severe depression		Panic disorder		Schizophrenia		Dementia		Alcohol disorder		Substance use disorder	
	I	VI	I	VI	I	VI	I	VI	I	VI	I	VI
Opinions												
Dangerous to others												
Yes	70.1	27.8*	45.4	9.6*	70.0	92.2*	22.4	17.6	86.4	89.7	89.1	93.0
Unforeseeable												
Yes	91.7	60.8*	84.5	53.2*	94.2	94.9	70.5	62.4	77.9	79.6	77.5	87.3†
Hard to communicate												

Yes	85.4	92.3	57.7	21.1 *	75.7	89.1 *	66.6	72.7	68.6	64.1	78.1	73.7
Blame themselves												
Yes	67.6	92.9 *	53.0	18.3 *	44.0	37.7	28.7	7.8 *	37.4	43.7 †	60.9	47.3 †
Can take care												
Yes	50.7	24.0 *	70.6	92.3 *	54.0	12.2 *	38.9	15.8 *	44.0	47.1	44.9	42.9
Not cured												
Yes	9.8	8.8	12.2	9.5	47.1	54.1	55.8	74.3 *	11.4	10.9	11.5	9.6
Never cured												
Yes	4.9	6.3	8.3	6.4	31.1	52.2 *	50.4	66.0	5.8	7.6	10.1	9.6
Harm themselves												
Yes	93.6	88.5	62.8	25.3 *	73.7	91.6 *	38.2	37.9	83.3	85.4	85.4	87.9
I: First year medical students, VI: Last year medical students												
*: p<0.001, †: p<0.05												

ACKNOWLEDGEMENTS

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General Authority for Health Services for the Emirate of Abu Dhabi

الإمارة أبو ظبي الهيئة العامة للخدمات الصحية



Under the patronage of:

H.H. Sheikh Hamed Bin Zayed Al Nahyan
Chairman of the Board of Directors of the

General Authority for Health Services for the Emirate of Abu Dhabi

First International Annual Primary Health Care Conference in the Emirate of Abu Dhabi : The Challenges in Primary Care Abu Dhabi-UAE. Jan 21-23 , 2006

Department of Primary Health Care & Preventive Services
Division of Health Affairs

In Collaboration with

Council of Health Ministers Cooperation for GCC States
World Federation For Medical Education-WFME
InterRAI
North America Primary Care Research Network-NAPCRG
International Primary Care Research Network-IPCRN
European Primary Care Research Network-EPCRN
Middle-East Primary Care Research Network-MEPCRN
SIG-WONCA (*World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians*)
Mmedi+WORLD International

The vision of GAHS is "To Provide World Class Healthcare." In accordance with this vision the Department of Primary Health Care and Preventive Services is planning the First International Primary Health Care Conference in the Middle-East.

Major changes continue to occur in Primary Care, and Medical Practice. There are increasing external and internal pressures to improve the quality of patient care, education and to emphasize prevention. Hence the conference on "The Challenges in Primary Care" will embrace the following:

Key Features of the conference

- Models of Primary Care
- Family Medicine Development
- Primary Care research
- Prevention in practice
- Maternal and Child Health
- Elderly Care
- Cultural issues and health beliefs
- Evidence-based Practice
- Information Technology

- Quality in Patient Care
- Social and Public Health Medicine
- Ethics in Healthcare
- Primary Health Care Issues
- Dental and Oral Health

The Conference will take place in the Emirate of Abu Dhabi between Jan 21st to Jan 23rd , 2006.

The conference will consider issues in Primary Care Practice and Education, sharing and evaluating experiences of clinicians and other healthcare professionals from the Middle-East and around the world on matters affecting patient care and education.

Speakers well known in their field will be invited from the Middle-East, Europe, Australia, and the USA in addition to local speakers. We are looking forward to the possibility of including your organization, institution or University in this prestigious event in the Emirate of Abu Dhabi .

Hoping that you will join us in bringing together an exciting program for Primary care, we thank you very much for your attention and look forward to receiving your response.

Meanwhile, please accept my thanks and best wishes.

Sincerely,

A. Abyad, MD, MPH, MBA, AGSF
Co Chairman of the first international Primary Care Conference
Senior Advisor Home Care
Family & Geriatric Medicine
General Authority for Health Services for the Emirate of Abu Dhabi
Editor, Middle-East Journal of Family Medicine
Editor, Middle-East Journal of Age & Aging
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MEAMA Second Course First Announcement 2006-2007

The second course of the MEAMA that consists of four sessions of four days each will start in April 2006 and will continue in Nov 2006. The third session and the fourth sessions will be in April and Nov 2007. This intensive study course composed of four sessions is directed towards physicians, nurses, social workers, and health care officers, responsible for the health care of older people. In addition to faculty members of medical, nursing, social and physiotherapy schools interested in developing the field of geriatrics and gerontology.

The course can also be attended by junior potential academic staff working in other fields (internal medicine, sub-specialities, biology) involving the ageing process and care of elderly people.

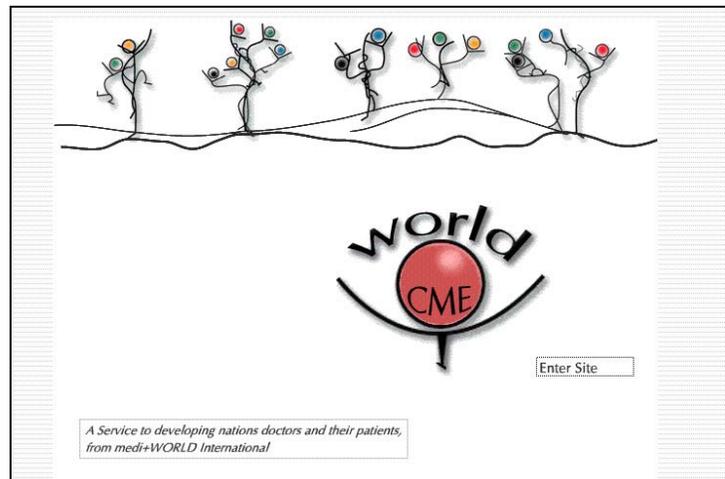
The complete programme aims to increase scientific, clinical, educational and managerial competences in medical gerontology. A certificate will be issued by the Group of Executive Board of the MEAMA after successfully concluding the four sessions.

Scientific Programme outlines / Session dates and topics will be announced later

Launch of 'World CME'

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 Publisher – World CME

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This Continuing Medical Education (CME) and Continuing Professional Development (CPD) service for global primary care doctors, was launched by medi+WORLD International, September 2005. It is available free of charge to all doctors in World Bank designated 'Low Income' countries and heavily discounted for 'Middle Income' countries.⁽¹⁾

medi+WORLD International are leading global medical education strategists, for both primary care doctors and specialists. Most education solutions use ICT (Information and Communications Technology) with multimedia CD as the preferred platform.

An ongoing project with CCORE (Collaboration for Cancer Outcomes Research and Evaluation) and the International Atomic Energy Agency (IAEA) of the United Nations, has just completed five pilot country trials in Pakistan, Egypt, Argentina, Malaysia and the Philippines. This educational project was financed by the IAEA to overcome a world shortage of oncologists and to lift the skills of often, untrained oncologists, working in developing nations. Multimedia CD was chosen as the current best platform for international education and the project involved ground-breaking work in the fields of logic, technology, and educational methods.

At the end of the trial period, the project was deemed a success by the IAEA and the work will now be translated to further its reach.

The appalling lack of quality medical education where it is most needed, was highlighted by the project, and many lessons were learned regarding the delivery of distance medical education.

medi+WORLD International, who are primarily publishers of quality assured continuing medical education and continuing professional development programs for primary care doctors have used this experience to provide a full CME/CPD program, online, and on CD, for global primary care doctors. All education is written as international medical education from the outset. Best practices are spelt out, but where possible, alternatives suggested for practitioners who may not have access

to high-end facilities or therapeutics. Eighty percent of presentations in general practice have been covered at launch, with programs under development to cover the remainder.

All programs are also written for those with English as a second language (ESL) and respect all cultures, religions, and sexes.

Education is in the form of interactive case presentations including all relevant tests, radiological images, pathology. Education includes psycho-social issues of both doctor and patient behaviours. Case presentations are complemented by over 90 medical training (digitised) videos in a wide range of topics.

At launch, several large countries, on the free list, are looking to use it as their formal CME or FMP education, and this is facilitated by inbuilt tracking and scoring 'behind the scenes', with direct electronic reporting.

World CME has an international advisory board drawn from all regions of the world and is a genuine endeavour, by all involved, to provide parity of resources for all doctors and their patients.

Middle East, Southern Asia and African countries that qualify for free access to the site include, among others: Azerbaijan, India, Ghana, Zimbabwe, Djibouti, Pakistan, Bangladesh, Sudan, Uzbekistan, Kyrgyz Republic, Uganda, Nepal, Cote D'Ivoire, Rwanda, Chad, Mozambique, Tajikistan, Kenya, Eritrea, Mali, Nigeria, Zambia, Niger, Yemen - Rep, Madagascar, Congo - Rep, Ethiopia, Congo - Dem. Rep, Burundi, Tanzania, Malawi, Afghanistan, Bhutan, , Iraq, Liberia, Libya, , Qatar, Sao Somalia, West Bank and Gaza, Kosovo and Kyrgyzstan.

Further details can be obtained at www.WorldCME.com.

REFERENCE

1. World Bank Report April 2005, using Atlas Method and PPP. (<http://www.worldbank.org/data/>)

Antibiotic sensitivity profile of common bacterial pathogens in Dubai – A study of 107 cases

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Key words: Antibiotic sensitivity, culture, Dubai

ABSTRACT

Background and Objectives: Antimicrobial resistance is on the rise and its early detection is important in implementing effective control measures.

Materials and Methods: This is a retrospective study of the antibiotic sensitivity profile of 107 culture positive samples collected over a period of 17 months. The antimicrobial susceptibility tests were done using the Bauer - Kirby method.

Results: E-coli was the commonest organism isolated. Penicillin G and Ciprofloxacin were the most effective antibiotics against gram +ve and gram -ve infections respectively.

Discussion: Antibiotics like Co-trimoxazole and Gentamycin fared better than newer antibiotics because of limited use.

INTRODUCTION

Over the past decade, antimicrobial resistance has emerged in all kinds of micro-organisms worldwide and Dubai is no exception. This is primarily due to the increase in antibiotic abuse.¹ Early detection of emerging trends in antimicrobial resistance may facilitate implementation of effective control measures.

Dubai has a large expatriate population. Since it is the economic hub of the region, a large number of people travel in and out of Dubai. This may facilitate the importation of various micro-organisms to the region.

The laboratory testing of antibiotic susceptibility contributes directly to patient care and the expertise of the microbiology laboratory can have powerful influence on antibiotic usage. We present the data collected over a period of 17 months in a private clinic in Dubai, mainly catering to the expatriate Indian population.

MATERIALS & METHODS

This is a retrospective study of the antibiotic sensitivity profile of 107 positive culture samples collected over a period of 17 months starting from January 2004. The samples which included pus from various lesions, urine, stool, throat swab and vaginal swabs were carefully collected without contamination from external sources according to NCCLS guidelines.² The culture media used in our study were nutrient agar, blood agar (incubated anaerobically if necessary), chocolate agar, CLED agar (for urine) and Mc Conkey's agar.

Bacterial growth was identified based on the colony characteristics, Gram's stain and biochemical reactions.³ Antimicrobial susceptibility tests were done by the Bauer - Kirby method using Mueller - Hinton agar.⁴ The diameter of the zone of inhibition in millimeters was scored as per Table 1.

Mean Sensitivity Score was calculated as per the following formula. Mean Sensitivity Score = (Total Sensitivity score / No. Of samples analyzed) x 100

RESULTS

We collected data from 107 positive culture samples belonging

to 74 male and 33 female patients. The age distribution is as per Figure 1. Urine and throat swabs showed maximum positivity with 37 and 28 each. The number of various samples showing positive culture is depicted in Figure 2. E-coli was the commonest organism grown in urine and stool while streptococcus pyogenes was predominantly seen in throat swabs. The complete list of all the organisms isolated is shown in Table 2. The Total sensitivity score of each organism against commonly used antibiotics is given in Table 3. E-coli showed maximum sensitivity to ciprofloxacin (Mean score = 85) while streptococcus aureus and streptococcus pyogenes showed maximum response to penicillin G (Mean score = 100). The Mean sensitivity score of commonly used antibiotics is shown in Figures 3 and 4.

DISCUSSION

E.Coli was the predominant organism isolated in Urine and stool samples. However ear, nose and throat samples showed mainly gram +ve organisms like Staph. Aureus and Streptococcus pyogenes. Klebsiella was the commonest Gram -ve organism isolated from these samples.

Gram +ve organisms showed maximum sensitivity to Penicillin G and Erythromycin while Ciprofloxacin was most effective against Gram -ve organisms. Co-trimoxazole showed a broad spectrum of activity and it performed better than Amoxycillin with Clavulanic acid. Among the parenteral antibiotics Gentamycin fared better than most third generation Cephalosporins.

Co-Trimoxazole and Gentamycin are rarely used these days because of the allergic reactions⁵ and ototoxicity⁶ respectively. Hence these old antibiotics are still effective in most infections. However the widely used newer antibiotics are slowly becoming less effective in this region.

There are reports of even Methicillin Resistant Staph Aureus responding to Co trimoxazole.⁷ However the use of Co-Trimoxazole as a prophylactic antibiotic in HIV infected patients may change its sensitivity profile in the future.⁸ The objectives of an antibiotic strategy are to implement clinical guidelines which cover the treatment of an individual patient and the policies based on these which will have maximum effects in public health.⁹

Table 1. Scoring of antibiotic sensitivity

Diameter of the zone of inhibition in millimeters	Score
Less than 10	0
10 - 13	1
14-17	2
More than 18	3

Mean Sensitivity Score was calculated as per the following formula.
 Mean Sensitivity Score = (Total Sensitivity score / No. Of samples analyzed) x 100

Figure 1. Age distribution of patients.

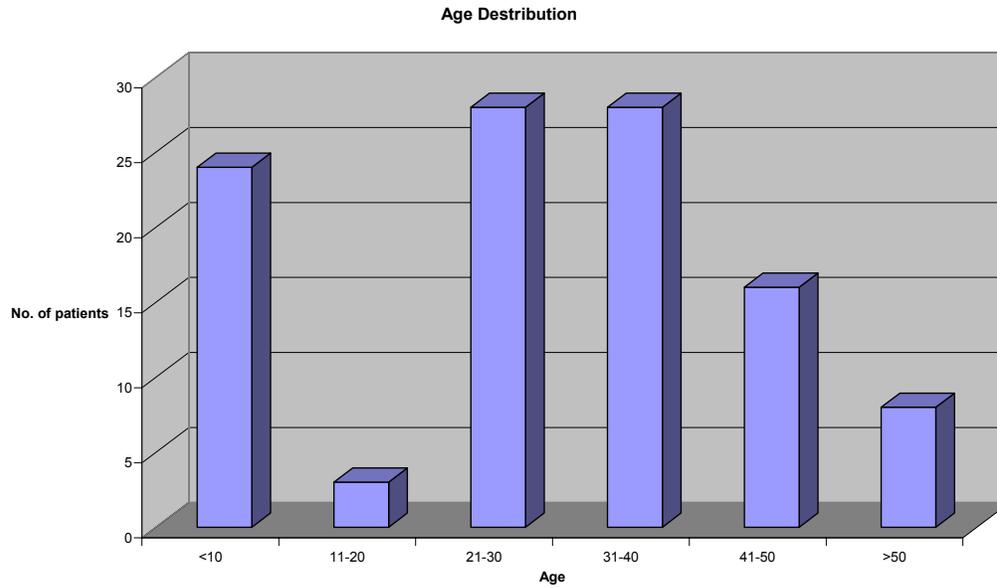


Figure 2. Number of various samples showing positive culture.

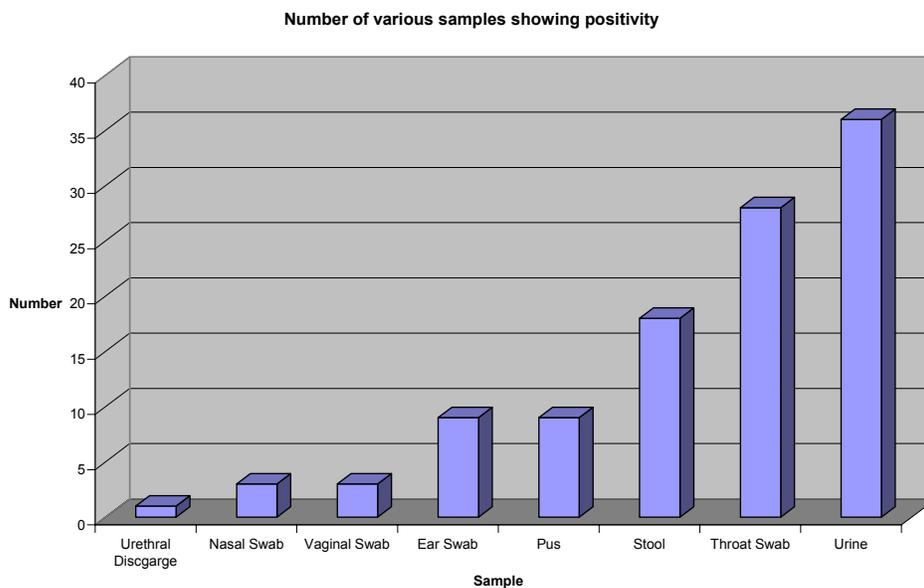


Table 2. *The growth of various organisms in the samples.*

	Ear swab	Nasal Smear	Pus	Stool	Throat Swab	Urethral Discharge	Urine	Vaginal Swab
C Albicans	1							3
Coag Neg Staph							1	
E Coli				12			16	
Group D Strep					2			
Klebsiella	1		1	2	5		4	
N. Gonorrhoea						1	1	
No Growth			1					
Proteus Mirabilis				1			2	
Proteus Vulgaris				1				
P. Aeruginosa	1	1					3	1
Salmonella				2				1
Staph. Aureus	5	1	5		3		6	
Staph.Saprophyticus							2	
Strep.Agalactia	1							
Strep.Pnuemoniae		1			1			
Strep.Pyogenes			1		11			
Streptococcus species							1	
Strep.Viridans			1		6		1	

Table 3. The Total sensitivity score of each organism against commonly used antibiotics

ANTIBIOTIC	E.Coli	Klebsiella	Ps. Aeruginosa	Salmonella	Staph Aureus	Strep Pnuem.	Strep Pyogenes	Strep Viridans
AMIKACIN								
AMIPICILLIN	6	4	1		7		5	3
AMOXYCILLIN + CLAVULANIC ACID	13	5	2		15		6	6
AMPHOTERICIN								
AMOXYCILLIN	17	7		2	3		3	3
AZITHROMYCIN			1		5		4	2
CHLORAMPHENICOL	2	3		2	2	1	2	3
CEFTAZIDIME	4	6	2		1			
CEFDINIR	3				1			2
CEFACLOR		1	1					
CEFOPERAZONE	19	10		1	3		2	3
CEFIXIME	25	13	4	2	4			1
CEFADROXIL	26	12	5		16		4	4
CIPROFLOXACIN	9	7	3	2	4	2	2	3
CEPHALEXIN	15	4	1		1		2	2
CLARITHROMYCIN	4		1		3			
GENTAMICIN					13		6	2
CEFTRIAZONE	1				18	2	9	8
CEFOTAXIME	16	4	1					
CLOXACILLIN								
CEFUROXIME			1					
CEFAZOLIN								
CLINDAMYCIN								
DOXYCYCLINE	2	1						
ERYTHROMYCIN	19	7	3					
NITROFURANTOIN	7	2	4		1			
FUSIDIC ACID								
FLUCONAZOLE	6	1	1	1	1			
IMIPENEM	1				20	2	12	7
ITRACONAZOLE					1			
KANAMYCIN								
KETOCONAZOLE	1	1	2		8			
LEVOFLOXACIN					11		6	2
METRONIDAZOLE	3	2			1			
NALIDIXIC ACID	20	7	3	1	16	2	6	3

Figure 3. Mean sensitivity of commonly used predominantly oral antibiotics

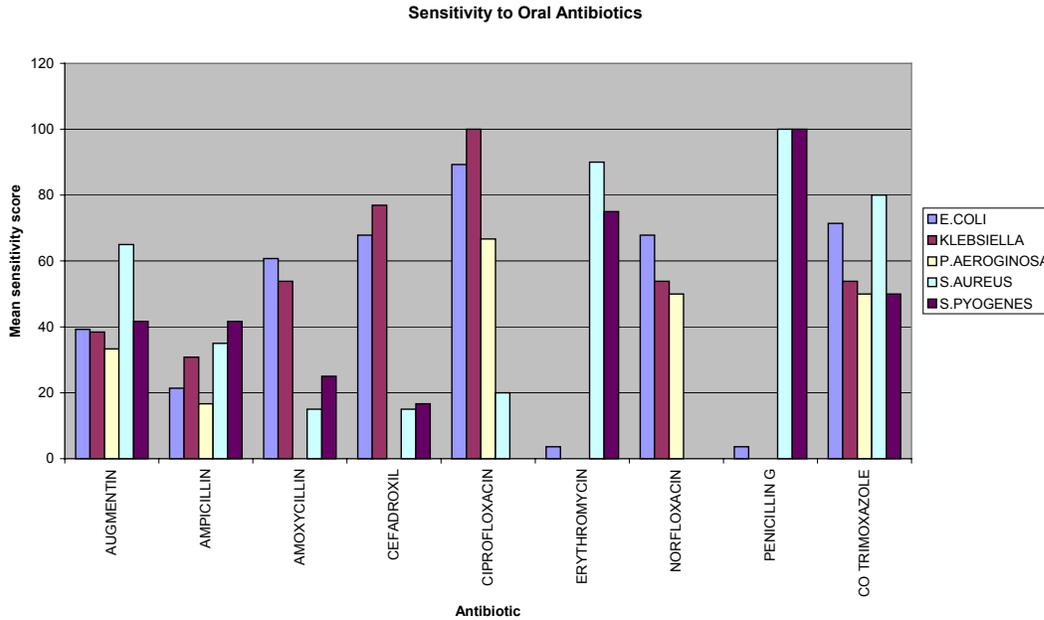
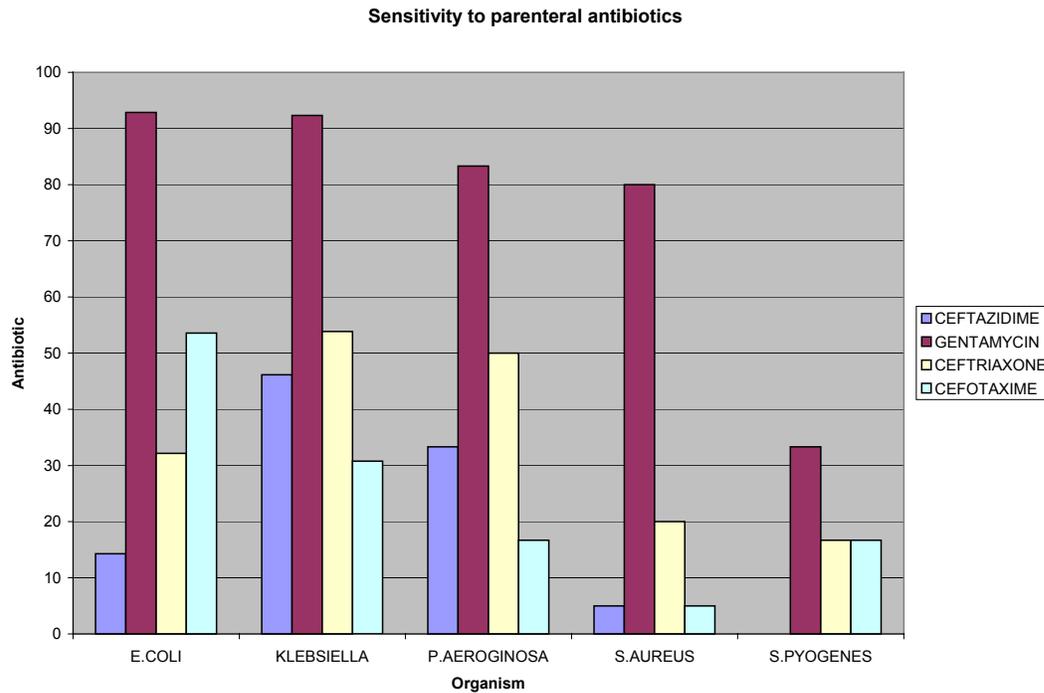


Figure 4. Mean sensitivity of commonly used parenteral antibiotics



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Women's Health Week in Rawalpindi, Pakistan

The inimitable Dr Manzoor Butt, of the Maqbool Clinic, Rawalpindi, has found yet another way of raising the economic and social status of the women and girls of the local community.

His 'Hina artist' competition was launched during 'marriage month' in Pakistan and was open to non-professional artists only. The competition was a truly international event with judges Emeritus Professor John Beasley, of the American Family Practice Board and Lesley Pocock, Publisher of the MEJFM in Australia.

Prize winners were: Saadia Abid, 15, first, Aamna, 16, second, and Aasia, 20 third.

We congratulate Dr Butt on his initiative as well as Saadia, Amnia and Aasia. "The competition was announced in the first week of July. More than 80- girls enrolled themselves, despite enrolment being very early on a Sunday morning in heavy rain. 51 girls took part in the competition."



Saadia – 1st prize winner



Aamna – 2nd prize winne



Aasia – 3rd prize winner.

The Middle East Academy for Medicine of Ageing (MEAMA) First Course 2003-2005

The First two-year MEAMA course that started in 2003 by a group of Middle-East and European Professors had finished in July 2005.

BACKGROUND

The number of older people is growing and they frequently have health-related problems with a mixture of physical, mental, social and behavioural aspects. In the past, these problems were seen only in a few older people and the families were able to take care of their parents or old relatives. However, societies are changing as a result of the demographic and cultural developments and they face the increasing possibilities of modern medicine.

The Middle East Academy for Medicine of Ageing Started in 2002. The first course 2003/2005 to stimulate the development of health care services for older people in the Middle- East area. The course has been build up with 4 sessions, each of 4 days, that will covered important topics of the health-related problems in older people.

AIM OF THE MIDDLE-EAST ACADEMY FOR MEDICINE OF AGEING

- To stimulate the development of services to meet the health related problems in increasing number of older people in the Middle-East Area. We formulated the goals as:

- To improve knowledge and skills of professionals, physicians, nurses and health care officers, in health related problems in older people, starting with a special interest in community care in the Middle-East area.

- To harmonise the attitudes and goals of future opinion leaders in approaching the health related problems of older people in the Middle East area.

- To establish a network among physicians, nurses and health care officers, responsible for the health care of older people and those responsible for medical and nurse students instruction, as well as general physicians caring for aged people.

- To stimulate scientific interest in the health related problems in older people.

BENEFIT OF APPLICATION

The course will increase knowledge and skills in the management of health related problems in older people in the Middle-East area. Participants will be trained in searching literature, presenting state of the art lectures, discussion with opinion leaders and chairing and reporting groups discussions. Each participant will be evaluated individually, to reach a maximum improvement of experiences and skills. The certificate of the course will be a valuable document for the participants' career.

The two-year MEAMA course was started in 2003 by a group of Middle-East and European Professors and the plan is to have two sessions every year either in Tripoli-Lebanon or elsewhere in the Middle-East.

The highly successful format of intensive attending participation in working groups, giving short presentations and leading discussions as well as state-of -of-the-art lectures by expert in the field is still followed today.

The organisers of the Middle-East Academy for Medicine of Ageing organise this course with support of the Abyad Medical Center, the European Academy for Medicine of Ageing, the European Union of Geriatric Medicine, the Geriatric Medicine Section of the European Union of Medical Specialists and the International Association of Gerontology, and Arab Scientists Organisation. None of these organisations has possibilities for financial support.

THE FIRST SESSION

The first session took place between Oct 2-5 , 2003 . The participants came from six Middle-East countries. The members of this small enthusiastic group were all very much engaged in the problems they will face in older people in the nearby future. During the course the participants presented lectures about the situation in their own countries. The teachers' state of the art lectures focused on demographic aspects in the Middle-East area. Differences were observed between the countries. The MEAMA seems to be an excellent forum for the exchange between countries and the discussion for developments. Other subjects we discussed were heart failure, diabetes mellitus, osteoporosis, dementia, depression and behavioural disturbances. The evaluation by the participants was excellent, with correct critical and constructive remarks.

THE SECOND SESSION

The second session took place in Tripoli between 8-11, 2004. Development with the second session was the support of Case Western University and the concurrent first annual Middle-east Conference of Age & Aging

From 8 through 11 April, 2004, the second session of the first MEAMA course was organized in Tripoli, Lebanon. In contrast to the first session this session was divided in two parts, the regular course for a limited number of participants and a one day symposium, accessible for physicians from Lebanon. Financial reasons were the background of the course-symposium combination. The costs for a course with highly qualified speakers from several countries in the Middle-East and the European Union can not be afforded by a small group of participants.

The symposium was the First Annual MEAMA Symposium for continuing professional development for geriatric medicine for physicians from Lebanon and the participants of the MEAMA course. Several speakers from the Middle-East, the European Union and India presented lectures about pharmacotherapy in older patients, depression, pulmonary diseases, peptic ulcer disease, falls and walking problems and decisions regarding the end of life. A well chosen and well presented mixture of relevant clinical problems in older patients.

The main objectives of the course' session were: care for older patients: who should be referred to hospital and which facilities needs a hospital to meet the problems of older patients? In addition common problems in older patients were discussed.

The course opened with a state of the art lecture by prof. S.M. Karandikar from India. He presented data and discussed how in India the coordination of health care services and social services offered better and more comprehensive care for older people. Dr P. Overstall, form the United Kingdom, presented information about the interaction between the services available in the community and the support that can be expected from the

hospital. The third speaker, prof. S.A. Duursma, from the Netherlands, discussed the organization of and services to be given by a hospital unit for geriatric medicine. The participants discussed in small groups questions regarding an old patient who had to be admitted to a hospital department for geriatric medicine. The questions were: What do you expect from the hospital as patient's general practitioner? What do you expect in the hospital as the patient herself? What do you expect in the hospital as the daughter who regularly cared her mother at home? What will be the approach of the nurses in the hospital to the patient and what is the position of the daughter? After these discussions dr P. Overstall gave an informative lecture about the issues in nursing homes and how to improve the long term care.

The second day started with lectures by the participants. Dr Sami Helou, from the United Arabia Emirates, focused on the role of the community health nurse, the community physician and the community physiotherapist. Attention was also given to the role of the hospital nurse, who is engaged with discharge planning for older patients. Dr Oscar Shucri described the three health care systems in Jordan, the governmental system, the private system and the United Nations Programme for Refugees. He also reported the start of the Jordan Society for Gerontology and Geriatrics, to stimulate the development of the services for health related problems in older people. Fatima Habib reported about Bahrain, she described the elderly care units of the government and private organizations. One of the Bahrain hospitals has a department for geriatric medicine as part of the department of internal medicine. Bahrain has a specialized hospital for psychogeriatric patients.

Prof. dr S.M. Karandikar followed these presentations with a draw how to develop community based services in developing countries. He stressed the focus on community services to be client centred and family centred. Special attention should be given to the access of information and communication and the cooperation amongst providers of health care services. Education and how to introduce programmes about teaching elderly care in an undergraduate medical school was covered by prof. F. Amin from Bahrain. He presented the well developed and nicely organized programme at the Bahrain university. The participants continued the programme with groups discussions about how older patients will experience the services at home and how to set up and manage a team for individual services at home. Enhancing independence through the use of assistive technology was well presented by dr M. Halimi from Lebanon.

The last day of the course opened with an overview by Dr A. Abyad, from Lebanon, regarding the needs for care by older patients, the important role of the care giver at home and the support of the family. Mrs Lorita, participant from Lebanon, presented a nice paper on exercises in older persons. Dr Nazih Kamal Eddine, participant from Lebanon discussed the interesting problems of visual impairment. In a combined presentation dr Mohammed Al Shaqi, participant from Saudi Arabia and dr Emad Esbaiti, participant from Kuwait, a good overview was given of quality indicators for scientific journals and for research projects. Dr A. Abyad continued this subject with a state of the art lecture regarding how to write a research protocol. Hormonal substitution in older women and men was the nicely presented lecture of prof. dr C. Netelenbos from the Netherlands. Ten years ago hormonal substitution in women was well accepted, however, the increasing number of publications with negative effects changed the ideas about oestrogen and progesterone substitution therapy. For men the pro's and contra's regarding testosterone substitution are still under discussion. The final part of the programme was the evaluation by the participants. Like after the first session the participants gave well documented critical remarks. Suggestions were: to coach

the participants during the preparation of the students' state of the art lectures; ending the day programme at 17.00 hour; the symposium day at the first day of the programme in stead of the third day in this session; more attention for the typical problems in the Middle-East region and more pharmacotherapy in the programme. Friendly was the judgement about the session: it was well organized in a good venue and well qualified speakers were attracted for the course. The last remark especially regards all speakers, they all accepted travelling economy class and did not receive any financial allowance for there presentations. In this way they all supported the goal of the MEAMA, to stimulate the development of health care services for older people in the Middle-East area.

The number of people attending the conference day was 100 physicians and paramedical staff. The number of participants in the workshop was 16 participants representing six countries.

The evaluation by the participants was excellent, with correct critical and constructive remarks. The third session will take place in Sept 30th, -Oct 3, 2004 in Bahrain and the fourth session between 1st of April to 4th of April 2005 in Tripoli.

THE THIRD SESSION

From 1 through 3 September, 2004, the third session of the first MEAMA course was organized in Bahrain in the Kingdom of Bahrain. Seventeen participants from six Middle-East countries participated in the session. Originally a one day symposium on aspects of quality of life was planned at the day before the third session. For the participants of the course this symposium would have been the first day of the session. Unfortunately, because of an unavoidable change in the date of the course, the symposium had to be cancelled. A disappointment which was compensated by the presence of two highly qualified speakers, who participated during the whole session, with excellent presentations and fruitful discussions. It was a pleasure for both participants and organizers to have prof. dr Miel Ribbe from Amsterdam, the Netherlands, and prof. dr Palmi Jonsson from Reykjavik, Iceland, available for information and advise.

The main objective for the session was quality of life. It was introduced by prof. Miel Ribbe. Quality of life is an individual experience and it changes over time during life. It has to be expressed by the individual or to be observed by others and it is based on resources, abilities and goals. It has social, psychological and health related indicators and environmental and cultural dimensions. Dr Abdul Razzak Abyad discussed the typical problems related to quality of life in older patients with dementia. He focused on how to improve quality of life in these patients, how to handle personal freedom and how to measure patients' mental incapability. Special attention was given to non-verbal communication with these patients. The groups' discussions focused on quality of life in patients with chronic heart failure, on haemodialysis, with depression or in the end stage of life. The general conclusion was the differences in the needs, and measures for each group of patients.

Dr Adel Al-offi presented the results of a community geriatric team for mental disorders in Bahrain. Consultations are offered at home, in nursing homes and in hospitals. The model was cost effective and postponed hospitalisation or admittance in a nursing home.

The level of adherence to the guidelines for diabetes mellitus in older patients in Canada was discussed by Al Malik Waleed from Saudia Arabia. The use of aspirin and blood pressure control were good, however, the measurements of HbA1c and the lipid profile was measured in less than 15% of the patients.

Physicians know the guidelines, but do not use them in older patients.

How to select a guideline from the increasing number of guidelines? Prof. Fawzi Amin recognizes six domains for the quality of a guideline: 1. the scope and purpose; 2. the stakeholder involvement; 3. the rigour of development; 4. the clarity and presentation; 5. the applicability; 6. the editorial independence. A critical review of a guideline should be followed by a discussion how to implement the guideline. For simple problems the guidelines are usually simple, for complex problems the guidelines are mostly broad and complicated. The groups' discussions asked for guidelines for special problems in patients, but also for caregivers, rehabilitation, safety and environmental risks and lifestyle improvement. For the nursing homes attention was asked for the end of life problems and cognitive functioning. For hospital discharge guidelines were requested. Guidelines for outpatient clinics were felt to be difficult to develop, for example regarding non-verbal communication.

In a second lecture prof. Miel Ribbe emphasized the subjective, dynamic, normative and comprehensive aspects of quality. And quality care includes the impact, the process and the output. Quality indicators and the minimum data set were discussed, followed by an introduction of the interRai group and instruments. Several members of the participants showed serious interest to participate in a study of the interRai, to get information and insight in the Arabic patients. It offers the possibility to compare the outcomes of the Arabic world with other countries and cultures.

As an area of the world, different from the Arabic world, prof. Palmi Jonsson was invited to explain the health care system in the Nordic countries of Europe: Norway, Sweden, Finland, Denmark and Iceland. Iceland has the highest life expectancy for people over 65 years of age in Europe. The limited population of Iceland made it possible to set up a system to keep older people at home as long as possible and to offer nursing home care only when needed. The success and the problems of the system were discussed. A problem in the system is the insufficient coordination between the institutions. Another problem is that general physicians have not been accustomed to visit patients at home. Because the incidence of chronic diseases in patients roughly doubles per five years increase of age, a programme for

prevention has been developed in Iceland, with preventive measures for the age group 15-40 years, the age group 40-50 years and the age group 50 to 70 years and older.

As in former sessions the participants evaluated the session and made suggestions for subjects of special interest for the last session of the course. The six subjects with the highest score of interest will be included in the programme of the next session: education and training for general practitioners and team members; how to start a society for gerontology and services for older people; theories about the process of ageing; nutrition, weight loss and adipositas; falls and fall prevention; management models in health care services for older people.

The course was accommodated by the Bahrain Ministry of Health in the attractive Novotel, build in accordance with the typical old Bahrain architecture. A major sponsor for the course was the Merck Institute of Aging & Health. The Ministry of Health of the government of Bahrain offered excellent support and Gulf Air offered generous and excellent travel facilities for the European speakers. The acceptance of a board position by prof. Miel Ribbe will strengthen further development of the board and will support the preparations for the second course, to be started in the autumn of 2005.

THE FOURTH SESSION

The fourth session took place in Tripoli, Lebanon between July 7th to 10th, 2005. The session was attended by ten participants and six of the participants finished their four sessions of training. The six graduating participants became part of the newly created network. The executive board planned to continue the course in the future. Dependant on the developments of the services for the health related problems for older people in the Middle East area the future programmes will be adapted to the specific needs. The idea is not only to teach and train people, but also to give support in the process of the development in the countries by adaptation of the programmes. A very beneficial side effect we want to reach is the development of a useful network for the participants of the course. For this reason we make all participants a 'member of the MEAMA' after the graduation and will offer them the opportunity for feedback, positions as speakers and participation in special activities of the following courses.

Pan Arab Congress for Evidence Based Medicine - The first EBM Arab forum

In the period from 11-14 April 2005, The National and Gulf Center for EBM (NGCEBM) in King Abdelaziz Medical City (KAMC) for National Guard at Riyadh, Saudi Arabia, has conducted the first Arab forum for Evidence Based Medicine. The center was established at May 2004, and was recognized by the Minister of health for GCC as a reference center for EBM.

EBM which is the integration of the best available evidence from research with the clinical experience on the context of patient beliefs and preferences. Although EBM as science was known since early 1990th, yet Arab world started to explore it. Some countries like Egypt, Bahrain, Oman and Saudi Arabia have developed centers for EBM; other countries like Sudan have developed an association for EBM.

These centers and associations are aiming at increasing the awareness of Arab world to EBM through teaching EBM.

OBJECTIVES OF THE PACEBM:

The aim of the congress was to promote EBM among Arab world. The objectives for the congress are:

1. To increase awareness to EBM among Arab world.
2. To exchange experiences between the interested people.
3. To increase the coordination and cooperation among EBM individuals and centers.
4. To provide EBM training in the post-congress workshops.

ACTIVITIES

1. The first 2 days (11-12 April 05): were devoted for the congress. The congress constituted of 8 sessions/themes:
 - 1.1. key Not: Prof Gordon Guyatt, McMaster University-Canada
 - 1.2. Cochrane Collaboration- Why Arab World? Three speakers covered this theme: Dr. Abdulla Al Khenazian, Dr. Hassan Baaqeel, and Dr. Mazen Ferwana.
 - 1.3. Debate: Who should decide? The patient or the Doctor? Dr. Mahmoud El Barbary took the role of "Doctor" while Dr. Edward Devol took the role of "patient". It was exciting session, where each party tried to prove himself as the right person. Poll through electronic devices was done through the debate.
 - 1.4. Impact of EBM in health care systems and policies: This session was covered by Dr. Khalid Al hussain, Dr. Lubna Al Ansary, and Dr. tawfeek Khoja.
 - 1.5. Systematic Reviews and Randomised controlled trials: delivered by Prof. Gordon Guyatt, Dr. Nassir Abuzeid, and Hesham Al-Inany.

- 1.6. EBM in Arab Countries: 4 Arab countries highlighted the main activities of EBM with areas of strength and limitations. These countries are: Bahrain (Dr. Khaldoon al Roomi), Syria (Dr. Adib Assali), Egypt (Dr. Abdel Hameed Attia), and Saudi Arabia (Dr. Bander Knawy)
- 1.7. Free paper presentations: 7 papers were presented by: A. Johar, G. Wajid, Z. Al Ziedan, A. Al Khnaizan, K. Al Ghamdi, M. Al Salamah, I Hassan.
- 1.8. EBM in Medical education training and curricula: Covered by Dr. Hossam Hamdi and Dr. Mohammad Hijazi.
2. Post-congress workshops: 4 parallel workshops were conducted, total attendees were 100.
 - 2.1 Basic EBM workshop: 48 attended
 - 2.2 How to Teach EBM "Teaching the Teachers": 12 attended.
 - 2.3. Pharmaco-economics: 12 attended
 - 2.4. How to do Systematic Reviews: 28 attended.

RECOMMENDATIONS OF THE PACEBM:

11 – 12 April, 2005 – King Faisal Conference Hall - Riyadh

1. Increasing the cooperation, and the exchange of expertise between Arab countries, find out the need to have similar conference annually.
2. Study changing the Arabic Translation for EBM to the shorter version – refer to the Arabic Recommendation.
3. Agreement by all attendants of the meeting to establish Arabic network for EBM, that would be a network to exchange expertise, the mechanisms of this network shall be defined later by the attendants of this business meeting in a later stage.
4. Emphasize on providing more workshops, and training courses in the field of Evidence Based Medicine in the Arab countries.
5. Recommending including of the Evidence Based Medicine within the curriculums of Medicine, and other science colleges.
6. Recommending including the Evidence Based Medicine for the physician as a mandatory Requirement when; they join Medical specialized training courses, and for their registration / registration to practice as physicians.
7. Benefiting from the successful implementations of EBM for other countries or centers, and consider them as a role model.
8. The conference recommends the participation of all healthcare providers, and healthcare decision-makers in the spread of EBM Concepts for all the benefits it carries for the patient, and the healthcare institution.