Improving albuminuria screening in Type 2 diabetes mellitus patients, at West Bay Health Center, Qatar

Wafaa Musallam (1)
Salma Elnour (1)
Hani Abdalla (1)
Rehan Ahmed Qasem Sharsheer (2)
Wafaa Yousuf (3)

(1) Specialist Family Medicine, Primary Health Care Corporation - Operations - West Bay HC
(2) Accreditation Coordinator, Primary Health Care Corporation
(3) Senior consultant, West Bay Health center manager, Primary Health Care Corporation

Corresponding author:
Wafaa Musallam
Specialist Family Medicine, Operations - Primary Health Care Corporation, West Bay HC Qatar
Email: wmusallam@phcc.gov.qa; drwafaa@yahoo.com

Received: October 2020; Accepted: November 2020; Published: December 1, 2020.
Citation: Wafaa Musallam et al. Improving albuminuria screening in Type 2 diabetes mellitus patients, at West Bay Health Center, Qatar.. World Family Medicine. 2020; 18(12): 58-60 DOI: DOI: 10.5742/MEWFM.2020.93904

Introduction

"Chronic kidney disease (CKD) is diagnosed by the persistent presence of elevated urinary albumin excretion (albuminuria), low estimated glomerular filtration rate (eGFR), or other manifestations of kidney damage" (1). Diabetic kidney disease occurs in 20–40% of diabetic patients. CKD typically develops after diabetes duration of 10 years in type 1 diabetes but is also present at diagnosis of type 2 diabetes. CKD can reach end-stage renal disease (ESRD) requiring dialysis or kidney transplantation and is the leading explanation for ESRD within ESRD in the U.S. Additionally, among people with type 1 or 2 diabetes, the presence of CKD markedly increases cardiovascular risk and health care costs (2). Screening for albuminuria is usually recommended a minimum of once a year, to assess urinary albumin (e.g., spot urinary albumin-to-creatinine ratio).

"Normal urine albumin creatinine ratio is defined as <30 mg/g Cr, and high urinary albumin excretion is defined as ≥30 mg/g Cr" (1). To verify the diagnosis of albuminuria, the test has to be repeated by using two to three specimens of UACR within a 3- to 6-month interval because of high variability between UACR excretion measurement (1).

In our health center, only 62.20% of patients with type 2 diabetes mellitus, underwent screening for it, which reflects the need for improving albuminuria screening.

Therefore, this project was conducted to improve the percentage of albuminuria screening in type 2 diabetes mellitus patients from 62.2 % to 93.2% which is 30% from baseline, over a 4-month period, by the completion of July 2018.

Methodology

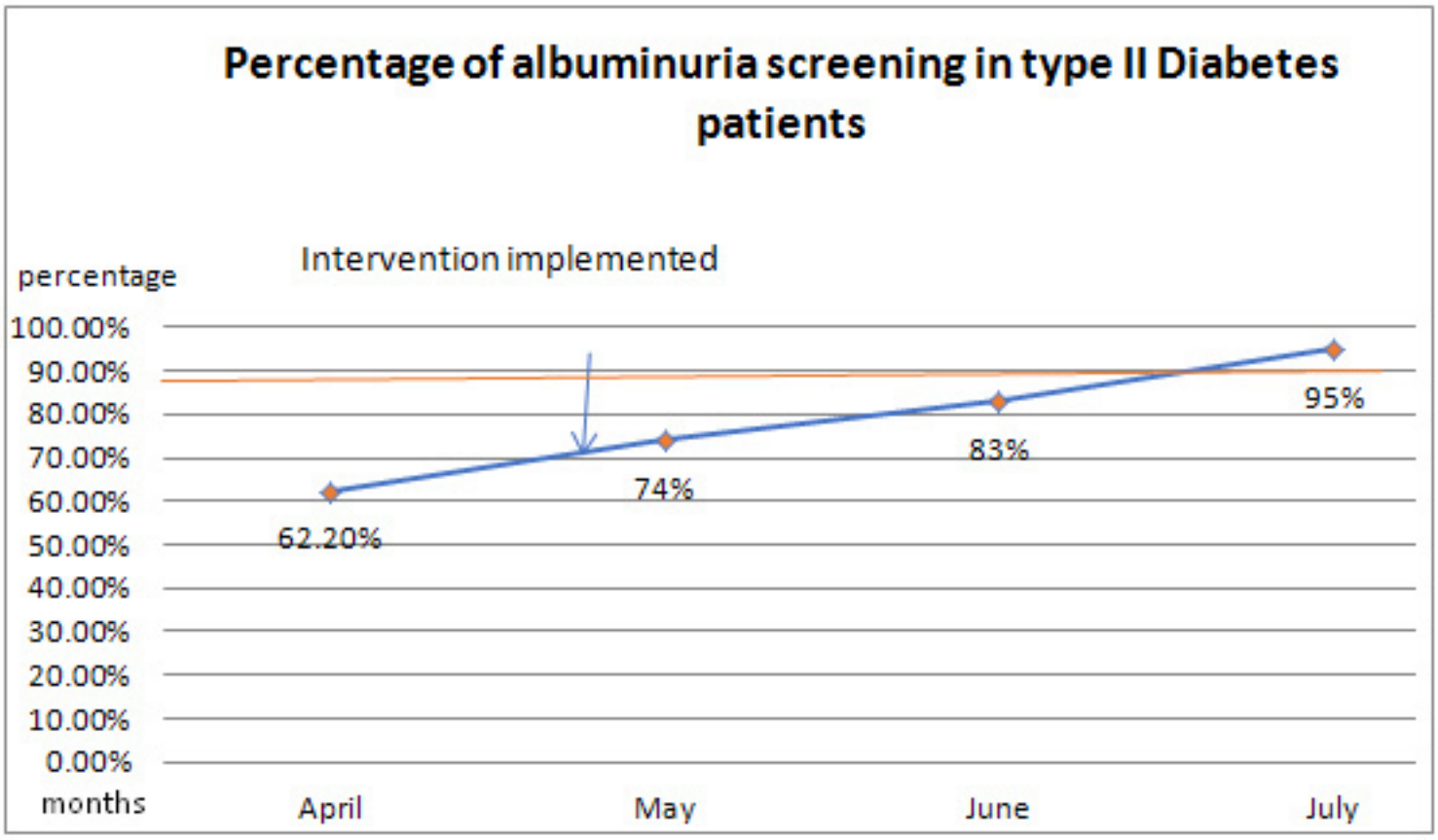
Initially, we got the approval from our health Centre Manager, to start our project. We introduced our project to our physician in our Health Centre General Clinic. Then, we reminded the physician verbally in each Inter-Professional Education Meeting and each other Physicians Gatherings about Albuminuria screening and confirmation and Initiation of treatment. Furthermore, we mailed a reminder email for albuminuria screening and confirmation of the test to all doctors in the General clinic. We then developed a reminder card and distributed it in all clinics and we fixed it to each clinic desk. Then monthly we monitored our progress by data collection till we completed the 4-month interval.

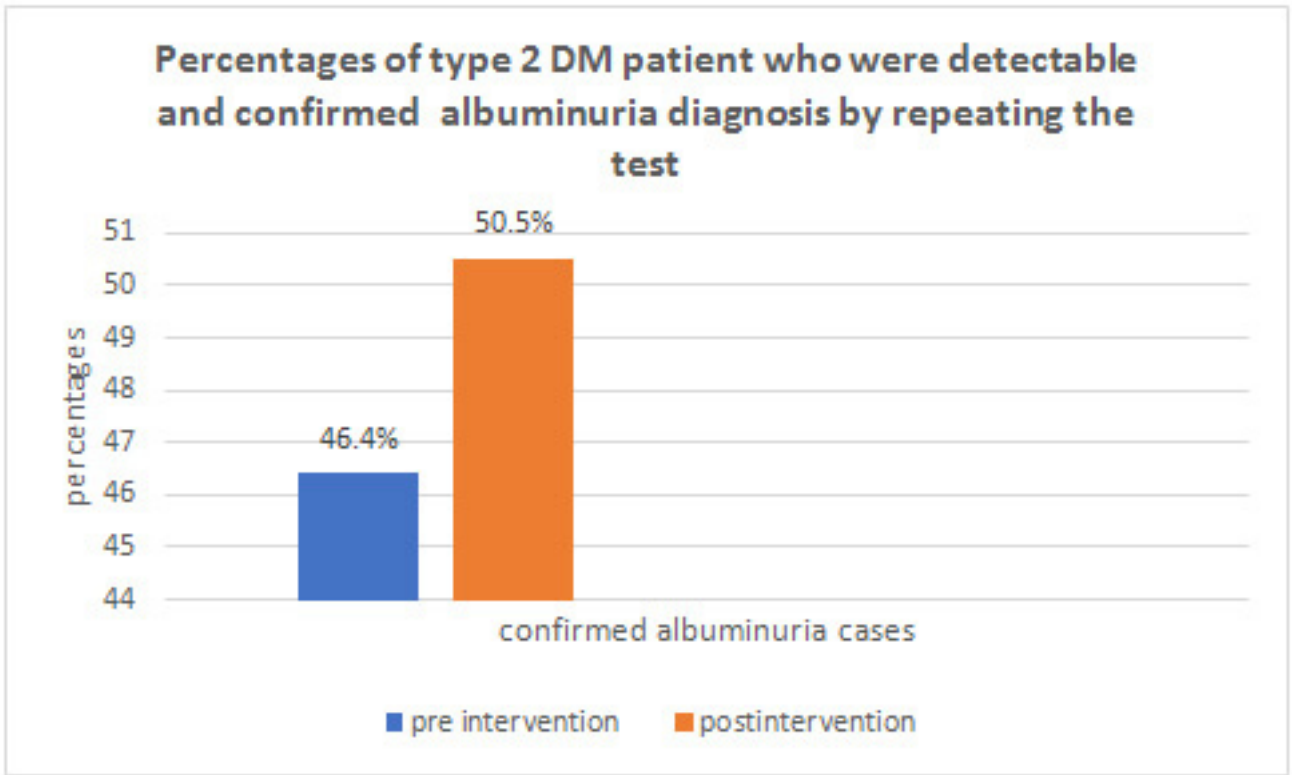
Results

• The Percentage of type 2 diabetes patients who were screened for albuminuria improved from 62.2% to 95% over a 4-month period.

• The Percentage of type 2 DM patients who were detectable and confirmed with an albuminuria diagnosis by repeating the test, improved from 46.4 % to 50.5%.

Key Words:
Type 2 diabetes mellitus, albuminuria, screening, nephropathy and chronic disease.


Percentage of albuminuria screening in type II Diabetes patients
Intervention implemented
percentage
100.00%
90.00%
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
months
April
May
June
July
62.20%
74%
83%
95%


Percentages of type 2 DM patient who were detectable and confirmed albuminuria diagnosis by repeating the test
51
50
49
48
47
46
45
44
percentages
46.4%
50.5%
confirmed albuminuria cases
pre intervention
postintervention

Discussion

Our project showed 32% improvement in the screening of albuminuria in type 2 diabetes mellitus, and our aim was to increase the percentage by 30 % from baseline. According to the WHO, the prevalence of diabetes in Qatar is 17%. In supported of this fact we carried out on our project to reduce the burden of diabetes on the health care system, and early identification of diabetes complications like chronic kidney disease. In addition, the degree of albuminuria is related to risk of cardiovascular disease and chronic nephropathy progression and mortality (1).

Conclusion

To conclude, our intervention showed improvement in the percentages of albuminuria screenings in type 2 diabetic patients. Additionally, our intervention showed further detection and confirmation of albuminuria diagnosis. Altogether, these changes will serve to improve early detection of microalbuminuria in type 2 diabetes mellitus and prompt treatment initiation for those cases with confirmed diagnoses of albuminuria.

We will adopt the change, as the results of pre- and post-intervention analysis which clearly showed improvement in albuminuria screening in type 2 diabetes mellitus, and we will generalize our intervention to other health centers and will keep educating and reminding our physicians about the importance of albuminuria screening. The subsequent step will proceed to the second cycle. This project , will assist early detection of chronic kidney disease in type 2 diabetes mellitus, and prevent progression of albuminuria and subsequently minimize CKD burden and cost. Furthermore, it aids to detect people who are at increased risk for cardiovascular disease.

References

1-https://care.diabetesjournals.org/content/42/Supplement_1/S124
2-Fox CS, Matsushita K, Woodward M, et al.; Chronic Kidney Disease Prognosis Consortium. Associations of kidney disease measures with mortality and end-stage renal disease in individuals with and without diabetes: a meta-analysis. Lancet 2012;380:1662–1673
CrossRef PubMedWeb of Science Google Scholar