

AWARENESS OF DIABETIC FOOT IN DIABETIC PATIENTS

Clinical Research

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ABSTRACT

The purpose of the study was to assess and make aware of diabetic foot in type 2 diabetic patients of Navi Mumbai population in the age group between 40- 60 yrs. A sample of 100 type 2 diabetic patients were assessed with Inlow's 60 second diabetic foot screening tool which consists of 12 different components. The answers obtained were analyzed. This study concludes among 100 patients, 35 patients who fall in the score of 0-6 were made aware to undergo yearly screening, 31 patients fall in the score of 7-12 were made aware to undergo screening in every 6 month and 18 patients fall in the score of 13-19 were made aware to undergo screening in every 3 months. This study also reveals that males were having high chances of developing diabetic foot than females

KEYWORDS:

Type 2 Diabetic Mellitus, Diabetic foot, Inlow's 60 second diabetic foot screening tool.

INTRODUCTION:

As of 2015, an estimated 415 million people had diabetes worldwide^[1], with type 2 Diabetic Mellitus making up about 90% of the cases^[2,3]. This represents 8.3% of the adult population^[3], with equal rates in both women and men^[4]. As of 2014, trends suggested the rate would continue to rise^[5]. Diabetes at least doubles a person's risk of early death.^[6] From 2012 to 2015, approximately 1.5 to 5.0 million deaths each year resulted from diabetes^[7,8]. The global economic cost of diabetes in 2014 was estimated to be US\$612 billion^[9].

In 2008, an estimated 347 million people in the world had diabetes and the prevalence is growing, particularly in low- and middle-income countries. India had 69.2 million people living with diabetes (8.7%) as per the 2015 data. Of these, it remained undiagnosed in more than 36 million people.^[10]

Diabetes mellitus (DM), commonly referred to as diabetes, is a group of metabolic diseases in which there are high blood sugar levels over a prolonged period. Diabetes is due to either the pancreas not producing enough insulin or the cells of the body not responding properly to the insulin produced. There types of diabetes mellitus.[11] are Type 1 diabetes mellitus is characterized by loss of the insulin-producing beta cells of the islets of Langerhans in the pancreas, leading to insulin deficiency. Type 2 DM is characterized by insulin resistance, which may be combined with relatively reduced insulin secretion. Type 2 DM is the most common type of diabetes mellitus.[11] complications include heart disease, stroke, chronic kidney failure, foot ulcers, amputation and damage to the eyes. One of the major complication of diabetes is diabetic foot.

Due to the peripheral nerve dysfunction associated with diabetes (diabetic neuropathy), patients have a reduced ability to feel pain. This means that minor injuries may remain undiscovered for a long while. People with diabetes are also at risk of developing a diabetic foot ulcer. Research estimates that the lifetime incidence of foot ulcers within the diabetic community is around 15% and may become as high as 25%. Where wounds take a long time to heal, infection may set in and lower limb amputation may be necessary. Foot infection is the most common cause of non-traumatic amputation in people with diabetes.^[12,13]

There are various measures of checking diabetic foot like 3 minute diabetic foot examination, 60 sec diabetic foot screening, Sensory threshold testing, PQRS testing, foot examination etc. One of the studies of sensory threshold examination states that sensory threshold increase in neurologically asymptomatic diabetic patients and there is positive correlation between the duration of onset of diabetes and increase sensory threshold.[14]

Inlow's 60 second diabetic foot screening tool is one of the scale to assess diabetic foot. It is one of the tools used to identify chances of

developing diabetic foot. This scale contains 12 different types of components which can be assist within 60 seconds. It has 3 major components like BY LOOK, BY TOUCH AND BY ASSESS. According to the score of the scale patient were advised to go for screening.^[15]

Hence the purpose of the study was to assess and make aware of diabetic foot in type 2 diabetic patients of Navi Mumbai population.

METHODOLOGY:

STUDY DESIGN: Cross-sectional study.

DURATION OF STUDY: 5 Months.

STUDY SUBJECT: Type II diabetic patients between 40 to 60 years.

SAMPLE SIZE: 100

INCLUSION CRITERIA:

- Type II Diabetes (50 Males & 50 Females)
- Age group between 40-60 years.

EXCLUSIVE CRITERIA:

- Type I Diabetes.
- Non-diabetic patients.
- Below 40 years and Above 60 years age group.
- Other foot problems which are not related to diabetes.
- Psychological problems
- Diabetic ulcers and Amputees.

Material used: Inlow's 60 second diabetic foot screening tool.

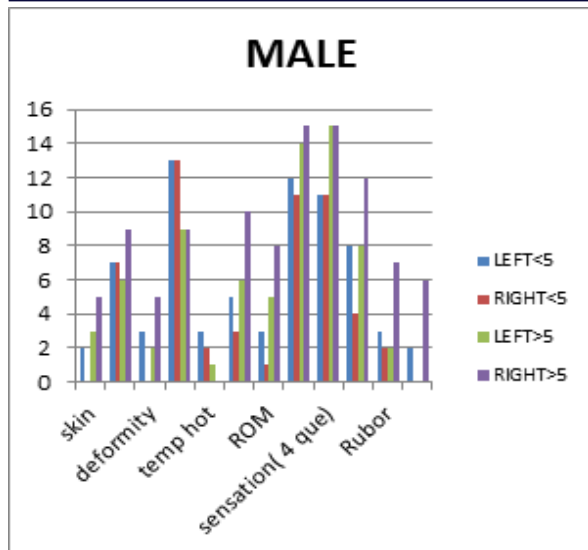
Ethical approval: The study was approved by Institutional Ethics and Research committee of D. Y. Patil University. Written informed consent was taken from all subjects and their identification information which was collected during the study was kept strictly confidential.

Procedure: The patients were made aware about the purpose of the study. Each components of Inlow's 60 second diabetic foot screening tool was explained to each and every patient and the answer were noted. The information obtained from the scale was analyzed using simple percentages and graphs.

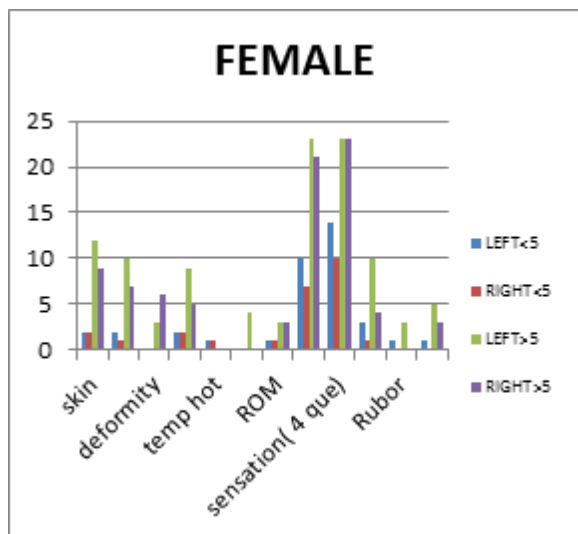
INFERENCE: The above graph suggests that the male who are suffering from DM >5 yrs have high chances of developing diabetic foot than that of patients who are having DM <5yrs.

RESULTS:

Graph 1: Impairment of foot in type 2 diabetic male patient suffering from Diabetes less than 5 yrs and more than 5 yrs:



Graph 2: Impairment of foot in type 2 diabetic female patients suffering from Diabetes less than 5 yrs and more than 5 yrs:



INFERENCE: The above graph suggests that females who are suffering from DM >5yrs have high chance of developing diabetic foot than that of females who are suffering from DM <5yrs.

DISCUSSION

This study was about awareness of diabetic foot in type 2 diabetic patients. In this study 100 samples of type 2 diabetic patients were taken out of which 50 were males & 50 were females. In this study Inlow's 60 second diabetic foot screening tool was used, it consists of 12 different components which gives an idea about foot problems and how frequently the patients should go for screening.

In this study reveals out of 100 patients, 32 males & 25 females were found to be suffering from type 2 diabetes mellitus for <5 years & 18 males & 25 females were found to be type 2 diabetes mellitus for >5 years.

According to this study males who were suffering from type 2 diabetes mellitus <5 and >5yrs had impaired sensation in both the feet which shows proactive sensations were less. Footwear was also inappropriate which was indicative of callus formation. Also the pedal pulses were absent in most of them which indicates that there are tendency to develop peripheral artery disease.

The study reveals that females who were suffering from type 2 diabetes mellitus <5 years sensations were impaired in both the feet and proactive sensations were less.

The study reveals that females who are suffering from type 2 diabetes mellitus >5 years sensations are impaired in both the feet, also the skin and nails were not well kept which was indicative of self-care deficit.

According to graph 1 & 2 which compares average ratio of males and females left and right leg. It indicates that males were suffering more than females. It also reveals that the males who are suffering from diabetes mellitus since >5 years has high tendency to develop diabetic foot than females. The finding of this study was supported by the study done by Thanh Dinh (2008). [16]

The components of the scale which were highly affected in males were sensation, footwear and pedal pulses whereas the components which were highly affected in females were sensations, skin and nails.

According to Inlow's 60 second diabetic foot screening tool among 100 patient's of type 2 diabetes mellitus, 35 patients fall in the score of 0-6 which includes 16 males and 19 females have to undergo yearly screening, 31 patients fall in the score of 7-12 in which 13 are males and 18 are females have to undergo screening in every 6 month and 18 patients fall under the score of 13-19 in which 7 are males and 4 are females have to undergo screening in every 3 months.

CONCLUSION:

- Among 100 patients of diabetes mellitus, 35 patients fall in the score of 0-6 made aware to undergo yearly screening, 31 patients fall in the score of 7-12 made aware to undergo screening in every 6 month and 18 patients fall in the score of 13-19 made aware to undergo screening in every 3 months.
- This study also reveals that males with type 2 diabetes mellitus were having high chances of developing diabetic foot than females with type 2 diabetes mellitus. Impaired sensation were more both in males as well as females followed by pedal pulses and footwear component affected more in males and skin and nail components were affected more in females.
- People with type 2 diabetes mellitus more than 5 years showed a higher tendency to develop diabetic foot with more impaired sensations than those with type 2 diabetes mellitus less 5yrs.

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