Demographic Characteristics of Diabetic Neuropathy Patients Attended at a Tertiary Care Hospital in Dhaka City

Mohammad Mashudur Rahman*, Abu Nasir Rizvi 2, Mohammad Nazim Uddin 3, Rashida Akter Khanam 4, Muhammad Abdul Momen Khan 5, Shafia Khanam 6

Abstract

Introduction: Diabetic neuropathy is one of the early complications of diabetes mellitus patients which is very difficult to face in the daily living activities. The purpose of the present study was to see the demographic characteristics of diabetic neuropathy patients. Materials & Methods: This descriptive type of cross-sectional study was conducted in the Department of Neurology including Neuropathy Clinic and in collaboration with department of Endocrinology at Bangabandhu Sheikh Mujib Medical University, Dhaka from January 2012 to December 2013 for a period of two (2) years. Adult diabetic patients presented with neuropathic pain with symmetrical involvement of distal limbs from indoor and outpatient department of Neurology including Neuropathy clinic as well as indoor and outpatient department of Endocrinology, BSMMU were enrolled in the study population. Data was collected by face to face interview. Information was collected by taking medical history and clinical examinations and subsequent laboratory investigations. Results: A total number of 102 cases were recruited for this study who were clinically diagnosed as painful diabetic polyneuropathy. Female was predominant than male 55(53.9%) cases and 47(46.1%) cases respectively. The male and female ratio was 1:1.2. Majority were in the age group of more than 55 years which was 55(53.9%) cases. The mean age with SD of the study population was 52.79±9.42 years. Among 102 patients type II DM was predominante than type I patients which were 95(92.2%) cases and 8(7.8%) cases respectively. The mean duration of DM with SD was 6.51±3.6 years. However the mean duration of neuropathic pain was 1.68±1.155 years. Conclusion: In conclusion majority of the diabetic neuropathy patients are female suffering from type II DM in the middle age.

Keywords: Diabetic Neuropathy, Demographic Characteristics, Type II DM.

Number of Tables: 04; Number of References: 18; Number of Correspondences: 06

Introduction

Painful diabetic polyneuropathy is a common manifestation of diabetes mellitus 1. Painful diabetic polyneuropathy significantly affect on the quality of life, sleep, mood, mobility, ability to motor activities and social behaviors of patients 2. High prevalence of diabetes and consequently painful neuropathy limits the daily activities of the patients 3.

Diabetic neuropathy is one of the most underestimated, very common and early among the complications of diabetes mellitus (DM) 4. The most common type of neuropathy in DM is diabetic peripheral neuropathy (DPN), with up to 50% of patients experiencing some degree of painful symptoms and 10% to 20% having symptoms severe enough to warrant treatment 5. A classic population-based study found some degree of neuropathy in 66.0% of patients with DM. Among those 54.0% with type 1 and 45.0% with type 2 DM had DPN. This study has also shown that 15% of DPN in type 1 and 13% in type 2 DM are symptomatic 6. Prevalence of neuropathic symptoms increases with the duration of diabetes and quality of glycemic control7. Although 7.5% diabetics, at the time of diagnosis, can have neuropathy, the incidence increases to about 50% after 20 to 25 years of diabetic life3. Up to 25% of individuals with
diabetes develop painful diabetic neuropathy, more than 14 million people in the United States with diabetes mellitus, nearly a quarter, suffer from painful diabetic neuropathy. In this context this present study was undertaken to see the demographic characteristics of diabetic neuropathy patients.

Materials and Methods
This was a descriptive type of cross-sectional study conducted from January 2012 to December 2013 for a period of two (2) years. This study was carried out in the Department of Neurology including Neuropathy Clinic and in collaboration with Department of Endocrinology at Bangabandhu Sheikh Mujib Medical University, Dhaka. Adult diabetic patients presented with neuropathic pain with symmetrical involvement of distal limbs from indoor and outpatient department of Neurology including Neuropathy clinic as well as indoor and outpatient department of Endocrinology, BSMMU were enrolled in the study population. Patients with the age group of below 18 and above 65 years, having the history of drug hypersensitivity reaction, impaired hepatic and renal function, pregnant women and in lactation were excluded from this study. All respondents were selected purposively and conveniently from the aforementioned study places. Data collection sheet was used to collect patient’s information. Data was collected by face to face interview. Information was collected by taking medical history and clinical examinations and subsequent laboratory investigations. Data was analyzed by computer with the help of SPSS version 21.0 software package. All data was recorded systematically in a preformed data collection sheet and expressed the quantitative variables as mean±SD. It was analyzed for categorical variables by using chi-squared test and for continuous variable t-test used. For all statistical tests, we considered p value <0.05 as statistically significant. Prior to the commencement of this study, the research protocol was approved by the Institutional Review Board (IRB) of BSMMU, Dhaka.

Results
A total number of 102 cases were recruited for this study who were clinically diagnosed as painful diabetic polyneuropathy. In this study female was predominant than male which was 55(53.9%) cases and 47(46.1%) cases respectively. The mean age with SD of the study population was 52.79±9.42 years with the age range of minimum 25 years and the maximum was 65 years (Table II).

Table-I: Distribution of the Respondents by Gender (n=102).

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>55</td>
<td>53.9</td>
</tr>
<tr>
<td>Male</td>
<td>47</td>
<td>46.1</td>
</tr>
<tr>
<td>Total</td>
<td>102</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Among 102 patients majority were in the age group of more than 55 years which was 55(53.9%) cases followed by 45 to 54 years, 35 to 44 years and 35 to 44 years which were 30(29.4%) cases, 12(11.8%) cases and 5(4.9%) cases respectively. The mean age with SD of the study population was 52.79±9.42 years with the age range of minimum 25 years and the maximum was 65 years (Table II).

Table-II: Distribution of the Respondents by Age Groups (n=102).

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 to 34 Years</td>
<td>5</td>
<td>4.9</td>
</tr>
<tr>
<td>35 to 44 Years</td>
<td>12</td>
<td>11.8</td>
</tr>
<tr>
<td>45 to 54 Years</td>
<td>30</td>
<td>29.4</td>
</tr>
<tr>
<td>More than 55 Years</td>
<td>55</td>
<td>53.9</td>
</tr>
<tr>
<td>Total</td>
<td>102</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Mean (±SD) 52.79±9.42 (Range 25-65)

Among 102 patients type II DM was predominant than type I patients which were 95(92.2%) cases and 8(7.8%) cases respectively. The ratio of type I and type II DM was 1:11.7 (Table III).

Table-III: Distribution of the Respondents by Type of DM (n=102).

<table>
<thead>
<tr>
<th>Type of DM</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td>8</td>
<td>7.8</td>
</tr>
<tr>
<td>Type II</td>
<td>94</td>
<td>92.2</td>
</tr>
<tr>
<td>Total</td>
<td>102</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The mean duration of DM with SD was 6.51±3.6 years. However the mean duration of neuropathic pain was 1.68±1.155 years (Table IV).

Table-IV: Mean Duration of DM and Neuropathic Pain among the Study Population.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of DM (yrs)</td>
<td>6.51±3.6</td>
</tr>
<tr>
<td>Duration of Neuropathic Pain (yrs)</td>
<td>1.68±1.155</td>
</tr>
</tbody>
</table>

Discussion
Painful diabetic polyneuropathy significantly affect on the quality of life, sleep, mood, mobility, ability to motor activities and social behaviors of patients. High prevalence of diabetes and consequently painful neuropathy limits the daily activities of the patients. This cross-sectional study was conducted in the departments of neurology including neuropathy clinic as well as Department of Endocrinology, BSMMU, Dhaka. A total number of 102 diabetic neuropathy patients have been recruited for this study who are clinically diagnosed as painful diabetic polyneuropathy. In this study female was predominant than male which was 55 (53.9%) cases and 47(46.1%) cases respectively. The male and female ratio was 1:1.2. Thus it is very clear that diabetic neuropathy is more commonly occur in the female than male. Similarly Galer et al have found 50% male and their findings are comparable with the findings of the present study. In the PHN group female patients
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It produces a significant devastating effect on quality of life. Prevalence higher with increasing age and duration of diabetic life. Strict glycemic control improve quality of life.

Conflict of Interests: None.

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References


Conclusion

Diabetic neuropathy is a permanent irreversible debilitating but preventable microvascular complication.
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