A Two-Year Review of Medical Admissions at the Emergency Unit of a Nigerian Tertiary Health Facility

Ogah O. S, Akinyemi R.O, Adesemowo A, Ogbodo E. I

Department of Medicine, University College Hospital, PMB 5116 Ibadan, Nigeria.

Department of Medicine, Federal Medical Centre, Idi-Aba, Abeokuta, PMB 3031 Sapon Abeokuta, Nigeria

ABSTRACT: The main objective of this study is to describe the spectrum of medical conditions presenting at the emergency department of the Federal Medical Centre, Abeokuta, Nigeria over a two year period. This is a retrospective analysis of a prospectively collected data. Data was collected from the emergency room admission records, patients’ case records, as well as Department of Medicine’s weekly morbidity report. Information collected included patients’ age, gender, date of admission, and clinical diagnoses. All the diagnoses were classified into the medical specialty they belong to as well as into a broad category of infectious and non-communicable diseases. A total of 2377 patients were admitted in the hospital during the period under review. The highest proportion of admissions was in the 30-39 years age group (17.6%), followed by 40-49 years (17.0%) and 20-29 (16.7%) age groups. Infectious diseases accounted for the highest incidence of admissions (1132; 47.6%). This was followed by diseases of the cardiovascular system (414; 17.4%), central nervous (227; 9.5%) and endocrine (193; 8.1%) systems, respectively. The least proportion of admissions was accounted for by dermatological conditions (4; 0.2%). Overall, non-communicable diseases accounted for 1245 (52.4%) of the cases and communicable diseases for 1132 (47.4%). Our study shows that non-communicable diseases (NCDs) are more likely reasons for adult Nigerians living in this Nigerian city to present for acute care. It also shows that age of presentation is at the prime of life. It is suggested that efforts should be geared towards control of emerging NCDs as well as control of prevailing common communicable diseases.

Keywords: Emergency, Medical Admissions, Communicable, Non-communicable, Abeokuta, Nigeria

INTRODUCTION

The emergency department is most often the gateway to many hospitals and healthcare facilities. The patterns of heart diseases in this department often reflect the magnitude of health problems in the society. The awareness and knowledge of the spectrum of medical conditions at the emergency room will also help in healthcare planning and provision of essential health services in the department such as equipment, hospital space and other needs both by the patients and healthcare providers. Information on causes and patterns of medical admissions in the emergency department is limited in our environment.

The objective of this study is therefore to describe the spectrum of medical conditions presenting at the emergency department of the Federal Medical Centre, Abeokuta, Nigeria over a two year period (January 2006- December 2007)

MATERIALS AND METHODS

This is a retrospective analysis of a prospectively collected data between January 2006 and December 2007. Data was collected from the emergency room admission records, patients’ case records, as well as Department of Medicine’s weekly morbidity report. All the diagnoses were based on the diagnosis made by the supervising consultants. We obtained the following information: patients’ age, gender, date of admission, and clinical diagnoses. All the diagnoses were
classified into the medical specialty they belong to as well as into a broad category of infectious and non-communicable diseases. Diseases were classified based on ICD-10.

Data analysis
All the information obtained was entered into a uniform case report form. Data were analysed with SPSS 17.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics was used for the summary of the data. Were applicable, a p-value of <0.05 was assumed to be statistically significant.

RESULTS
A total of 2377 patients were admitted in the hospital during the period under review. There were 1237(52%) males and 1140 (48%) females, with a male preponderance in the ratio of 1.1:1. Table 1 shows the age distribution of the patients. The highest proportion of admissions was in the 30-39 years age group (17.6%), followed by 40-49 years (17.0%) and 20-29 (16.7%) age groups.

Table 1
Clinical characteristics of the Subjects

<table>
<thead>
<tr>
<th>Parameter</th>
<th>All</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>2377</td>
<td>1237</td>
<td>1140</td>
</tr>
<tr>
<td>Percent (%)</td>
<td>100</td>
<td>52</td>
<td>48</td>
</tr>
<tr>
<td>Age</td>
<td>45.6 (18.5)</td>
<td>45.4(18.4)</td>
<td>45.8(18.6)</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20</td>
<td>156(6.6)</td>
<td>88(3.7)</td>
<td>68(2.9)</td>
</tr>
<tr>
<td>20-29</td>
<td>397(16.7)</td>
<td>191(8.0)</td>
<td>206(8.7)</td>
</tr>
<tr>
<td>30-39</td>
<td>419(17.6)</td>
<td>224(9.4)</td>
<td>195(8.2)</td>
</tr>
<tr>
<td>40-49</td>
<td>404(17.0)</td>
<td>230(9.7)</td>
<td>174(7.3)</td>
</tr>
<tr>
<td>50-59</td>
<td>356(15.0)</td>
<td>182(7.7)</td>
<td>174(7.3)</td>
</tr>
<tr>
<td>60-69</td>
<td>337(14.2)</td>
<td>169(7.1)</td>
<td>168(7.1)</td>
</tr>
<tr>
<td>&gt;=70</td>
<td>308(13.0)</td>
<td>153(6.4)</td>
<td>155(6.5)</td>
</tr>
<tr>
<td>Communicable</td>
<td>1132(47.6)</td>
<td>591(47.8)</td>
<td>541(47.5)</td>
</tr>
<tr>
<td>Non-communicable</td>
<td>1245(52.4)</td>
<td>646(52.2)</td>
<td>599(52.5)</td>
</tr>
</tbody>
</table>

Table 2
Pattern of admission based on specialty

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious Diseases</td>
<td>1132</td>
<td>47.6</td>
</tr>
<tr>
<td>Cardiology</td>
<td>414</td>
<td>17.4</td>
</tr>
<tr>
<td>Neurology</td>
<td>227</td>
<td>9.5</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>193</td>
<td>8.1</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>159</td>
<td>6.7</td>
</tr>
<tr>
<td>Respiratory Medicine</td>
<td>90</td>
<td>3.8</td>
</tr>
<tr>
<td>Haematology</td>
<td>87</td>
<td>3.7</td>
</tr>
<tr>
<td>Nephrology</td>
<td>61</td>
<td>2.6</td>
</tr>
<tr>
<td>Toxicology</td>
<td>10</td>
<td>0.4</td>
</tr>
<tr>
<td>Dermatology</td>
<td>4</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Based on specialty, the distribution of all admitted patients is shown in Table 2. Infectious diseases accounted for the highest incidence of admissions (1132; 47.6%). This was followed by diseases of the cardiovascular system (414; 17.4%), central nervous (227; 9.5%) and endocrine (193; 8.1%) systems, respectively. The least proportion of admissions was accounted for by dermatological conditions (4; 0.2%).
Overall, non-communicable diseases accounted for 1245 (52.4%) of the cases and communicable diseases for 1132 (47.4%).

Figure 2 depicts the trend in admission in relation to time/month of the year. It reveals the temporal pattern of admission with the highest admission noted in January and least in March. Peak periods of admission were also noted in the months of May and November.

Table 3 shows the distribution of diseases according to the specialty as well as gender. Severe hypertension and acute heart failure are the common cardiac admissions. Complications associated with poor glycaemic control are the commonest endocrine emergencies in Abeokuta. Acute exacerbation of acute peptic disease and complications related to chronic liver disease are the commonest gastrointestinal and hepatobiliary emergencies encountered.

TABLE 3a:
Pattern of diseases according to specialty and gender: Cardiology, Dermatology, Endocrinology, Hematology and Nephrology

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Disease</th>
<th>All (n=2377)</th>
<th>Men (n=1237)</th>
<th>Woman (n=1140)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>Severe Hypertension</td>
<td>205(49.5%)</td>
<td>88(21.3%)</td>
<td>117(28.3%)</td>
</tr>
<tr>
<td></td>
<td>Congestive Cardiac Failure</td>
<td>186(44.9%)</td>
<td>108(26.1%)</td>
<td>78(18.8%)</td>
</tr>
<tr>
<td></td>
<td>Acute chest pain syndrome</td>
<td>14(3.4%)</td>
<td>8(1.9%)</td>
<td>6(1.4%)</td>
</tr>
<tr>
<td></td>
<td>Arrhythmia</td>
<td>4(1.0%)</td>
<td>1(0.2%)</td>
<td>3(0.7%)</td>
</tr>
<tr>
<td></td>
<td>Cardiac tumour</td>
<td>1(0.2%)</td>
<td>1(0.2%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td></td>
<td>Constrictive Pericarditis</td>
<td>1(0.2%)</td>
<td>0(0%)</td>
<td>1(0.2%)</td>
</tr>
<tr>
<td></td>
<td>Deep Vein Thrombosis</td>
<td>1(0.2%)</td>
<td>0(0%)</td>
<td>1(0.2%)</td>
</tr>
<tr>
<td></td>
<td>Complete heart block</td>
<td>1(0.2%)</td>
<td>1(0.2%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td></td>
<td>Infective endocarditis</td>
<td>1(0.2%)</td>
<td>1(0.2%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>414(100.0%)</td>
<td>208(50.2%)</td>
<td>206(49.8%)</td>
</tr>
<tr>
<td>Dermatology</td>
<td>Steven Johnson Syndrome</td>
<td>4(100.0%)</td>
<td>1(25.0%)</td>
<td>3(75.0%)</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>Uncontrolled DM</td>
<td>131(67.9%)</td>
<td>72(37.3%)</td>
<td>59(30.6%)</td>
</tr>
<tr>
<td></td>
<td>Diabetic foot</td>
<td>39(20.2%)</td>
<td>21(10.9%)</td>
<td>18(9.3%)</td>
</tr>
<tr>
<td></td>
<td>Hyperglycemic coma</td>
<td>19(9.8%)</td>
<td>10(5.2%)</td>
<td>9(4.7%)</td>
</tr>
<tr>
<td></td>
<td>Thyrotoxicosis</td>
<td>4(2.1%)</td>
<td>1(0.5%)</td>
<td>3(1.6%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>193(100.0%)</td>
<td>104(53.9%)</td>
<td>89(46.1%)</td>
</tr>
<tr>
<td>Haematology</td>
<td>Haemolytic Anaemia</td>
<td>1(1.1%)</td>
<td>1(1.1%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>87(100.0%)</td>
<td>42(48.3%)</td>
<td>45(51.7%)</td>
</tr>
<tr>
<td>Nephrology</td>
<td>Acute Renal Failure</td>
<td>25(41.0%)</td>
<td>14(23.0%)</td>
<td>11(18.0%)</td>
</tr>
<tr>
<td></td>
<td>Nephrotic syndrome</td>
<td>5(8.2%)</td>
<td>2(3.3%)</td>
<td>3(4.9%)</td>
</tr>
<tr>
<td></td>
<td>Polycystic Kidney Disease</td>
<td>2(3.2%)</td>
<td>2(3.2%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>61(100.0%)</td>
<td>42(68.9%)</td>
<td>19(31.1%)</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>Acid peptic disease</td>
<td>123(77.4%)</td>
<td>50(31.4%)</td>
<td>73(45.9%)</td>
</tr>
<tr>
<td></td>
<td>Chronic liver disease (Cirrhosis)</td>
<td>21(13.2%)</td>
<td>17(10.7%)</td>
<td>4(2.5%)</td>
</tr>
<tr>
<td></td>
<td>PLCC</td>
<td>11(6.9%)</td>
<td>9(5.7%)</td>
<td>2(1.3%)</td>
</tr>
<tr>
<td></td>
<td>Gastric Carcinoma</td>
<td>1(0.6%)</td>
<td>1(0.6%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td></td>
<td>Amoebic liver abscess</td>
<td>1(0.6%)</td>
<td>1(0.6%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td></td>
<td>Pancreatitis</td>
<td>1(0.6%)</td>
<td>1(0.6%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td></td>
<td>Malabsorption Syndrome</td>
<td>1(0.6%)</td>
<td>(0.6)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>159(100.0%)</td>
<td>78(49.1%)</td>
<td>81(50.9%)</td>
</tr>
<tr>
<td></td>
<td>HbSS Crisis</td>
<td>69(79.3%)</td>
<td>34(39.1%)</td>
<td>35(40.2%)</td>
</tr>
<tr>
<td></td>
<td>Lymphoma/Lymphoproliferative disease</td>
<td>17(19.5%)</td>
<td>7(8.0%)</td>
<td>10(11.5%)</td>
</tr>
</tbody>
</table>
TABLE 3b:
Pattern of diseases according to specialty and gender: Infectious, Toxicology, Neurology and Respiratory diseases

| Infectious Disease | Acute Malaria | Septicaemia | Gastroenteritis | HIV/AIDS | Lobar pneumonia | Pyelonephritis | Tuberculosis | Tetanus | Meningitis | Acute pyelonephritis | Liver Abscess | Bronchiectasis | Meningitis | Pyelonephritis | Other causes of emergency admission in this city include sickle cell crises, complications associated with adverse drug reactions (Steven Johnson Syndrome), renal failure, stroke, seizure disorders and hypertensive encephalopathy. Acute malaria, sepsis, gastroenteritis, complications associated with HIV/AIDS and lobar pneumonia are common infection related reasons for emergency admissions.

DISCUSSION

Generally, disease patterns in the emergency room may reflect the pattern of diseases in the immediate environment which the health facility subserves. The higher male to female ratio observed in the study is similar to previous studies in patterns of medical ward admissions in other parts of the country. Except for hematological and gastroenterological disorders, generally the different disease conditions are more frequently diagnosed in men than in women. This is similar to studies by Odenigbo(Odenigbo and Oguejiofor, 2009), Ogun(Ogun et al., 2000), and Ike(Ike, 2008). Apart from the fact that chronic diseases present earlier in men(due to the protective effect of female hormones), it is also likely that the men who are usually the breadwinners in the home are more likely to be taken to the hospital for acute care than their female counterparts. The study also shows that non-communicable diseases are frequently diagnosed compared to traditional infectious diseases. This is a reflection of the NCD epidemic emerging in developing countries as Nigeria. Similar observations have been made by other workers in the country (Odenigbo and Oguejiofor, 2009, Ike, 2008, Unachukwu et al., 2008). This is in contrast to studies carried out in the country in the 60s and 70s where communicable diseases were far dominant (Adetuyibi et al., 1976, Haddock, 1979, Ogunmekan, 1973). The reasons for this include lifestyle changes, as well as rural to urban migration. This may also be reflective of the impact of control measures on communicable diseases, such as health education, better sanitation and immunization.

| Infectious Disease | Acute Malaria | Septicaemia | Gastroenteritis | HIV/AIDS | Lobar pneumonia | Pyelonephritis | Tuberculosis | Tetanus | Meningitis | Acute pyelonephritis | Liver Abscess | Bronchiectasis | Meningitis | Pyelonephritis | Other causes of emergency admission in this city include sickle cell crises, complications associated with adverse drug reactions (Steven Johnson Syndrome), renal failure, stroke, seizure disorders and hypertensive encephalopathy. Acute malaria, sepsis, gastroenteritis, complications associated with HIV/AIDS and lobar pneumonia are common infection related reasons for emergency admissions.

DISCUSSION

Generally, disease patterns in the emergency room may reflect the pattern of diseases in the immediate environment which the health facility subserves. The higher male to female ratio observed in the study is similar to previous studies in patterns of medical ward admissions in other parts of the country. Except for hematological and gastroenterological disorders, generally the different disease conditions are more frequently diagnosed in men than in women. This is similar to studies by Odenigbo(Odenigbo and Oguejiofor, 2009), Ogun(Ogun et al., 2000), and Ike(Ike, 2008). Apart from the fact that chronic diseases present earlier in men(due to the protective effect of female hormones), it is also likely that the men who are usually the breadwinners in the home are more likely to be taken to the hospital for acute care than their female counterparts. The study also shows that non-communicable diseases are frequently diagnosed compared to traditional infectious diseases. This is a reflection of the NCD epidemic emerging in developing countries as Nigeria. Similar observations have been made by other workers in the country (Odenigbo and Oguejiofor, 2009, Ike, 2008, Unachukwu et al., 2008). This is in contrast to studies carried out in the country in the 60s and 70s where communicable diseases were far dominant (Adetuyibi et al., 1976, Haddock, 1979, Ogunmekan, 1973). The reasons for this include lifestyle changes, as well as rural to urban migration. This may also be reflective of the impact of control measures on communicable diseases, such as health education, better sanitation and immunization.

| Infectious Disease | Acute Malaria | Septicaemia | Gastroenteritis | HIV/AIDS | Lobar pneumonia | Pyelonephritis | Tuberculosis | Tetanus | Meningitis | Acute pyelonephritis | Liver Abscess | Bronchiectasis | Meningitis | Pyelonephritis | Other causes of emergency admission in this city include sickle cell crises, complications associated with adverse drug reactions (Steven Johnson Syndrome), renal failure, stroke, seizure disorders and hypertensive encephalopathy. Acute malaria, sepsis, gastroenteritis, complications associated with HIV/AIDS and lobar pneumonia are common infection related reasons for emergency admissions.

DISCUSSION

Generally, disease patterns in the emergency room may reflect the pattern of diseases in the immediate environment which the health facility subserves. The higher male to female ratio observed in the study is similar to previous studies in patterns of medical ward admissions in other parts of the country. Except for hematological and gastroenterological disorders, generally the different disease conditions are more frequently diagnosed in men than in women. This is similar to studies by Odenigbo(Odenigbo and Oguejiofor, 2009), Ogun(Ogun et al., 2000), and Ike(Ike, 2008). Apart from the fact that chronic diseases present earlier in men(due to the protective effect of female hormones), it is also likely that the men who are usually the breadwinners in the home are more likely to be taken to the hospital for acute care than their female counterparts. The study also shows that non-communicable diseases are frequently diagnosed compared to traditional infectious diseases. This is a reflection of the NCD epidemic emerging in developing countries as Nigeria. Similar observations have been made by other workers in the country (Odenigbo and Oguejiofor, 2009, Ike, 2008, Unachukwu et al., 2008). This is in contrast to studies carried out in the country in the 60s and 70s where communicable diseases were far dominant (Adetuyibi et al., 1976, Haddock, 1979, Ogunmekan, 1973). The reasons for this include lifestyle changes, as well as rural to urban migration. This may also be reflective of the impact of control measures on communicable diseases, such as health education, better sanitation and immunization.
We also noted seasonal differences in the number of admissions during this period. Admission was highest during the hot and dry period of the year compared to the wet season. Least number of admissions was noted during the transition from hot to wet season. Similar patterns have been reported by previous workers in the country (Ansa et al., 2008, Isezuo, 2003, Parry et al., 1977, Kadiri and Arije, 1999). For the purpose of health planning, therefore, high admission rates can be anticipated during these periods and resources mobilized to meet the increased demands.

One of the limitations of this study is the fact that we did not collect outcome information.

In conclusion, this study shows that non-communicable diseases (NCDs) are more likely reasons for adult Nigerians living in this Nigerian city to present for acute care. It also shows that age of presentation is at the prime of life.

It is suggested that efforts should be geared towards control of emerging NCDs as well as control of prevailing common communicable diseases. It is also paramount to put in place secondary preventive measure to avoid chronic complications associated with these conditions. Efforts should be placed on NCD risk factors screening in the general community.

Although only 14% of our patients are in the elderly category, there is need for the establishment of geriatric care service in the community because of the growing elderly populace.

Acknowledgments
The authors wish to thank all the nurses in the emergency room of Federal Medical Centre Abeokuta who assisted in the collection and collation of the data

REFERENCES


