Original Article

DISEASE PATTERN OF PATIENTS UTILIZING X-RAY SERVICES IN BENIN-CITY, NIGERIA

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ABSTRACT

Objective: Planning for disease prevention requires decision-making authorities to have access to reliable information based on systematic and continuous diseases recording, hence this study. *Methodology:* This was a descriptive study and subjects were all patient referred to the x-ray department of University of Benin Teaching Hospital (UBTH), Benin City. The information was extracted from their request cards over a period of one year and analyzed.

Results: Of the 1,647 patients seen, 794(48.2%) were apparently well while 853 (51.8%) presented with pathological conditions. The ten leading diseases were cardiomegaly, pneumonia (non-tuberculous), pulmonary tuberculosis, degenerated diseases of the spine, fractures of skull, lower and upper limbs, heart failure, abnormal intravenous urography, and sinusitis. It was observed that most of the conditions recorded are preventable.

Conclusions: There is therefore the need for effective preventive measures to control these diseases in the at-risk population, so as to reduce disease burden and health care cost.

KEY WORDS: Disease pattern, X-ray, Benin City.

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INTRODUCTION

The capacity to predict, prevent, diagnose and monitor diseases and health related problems has increased due to technological advances. Strategic planning for the utilization of health services at all tiers of health services can only be achieved through access to reli-

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able information based on systematic and continuous disease recording. Regular review of patients data can provide useful information on the demographic data, the pattern of diseases and changing trend in disease burden,^{1,2} that would be useful in planning & evaluation.

Radiological diagnostic services are considered an essential technology and analysis of radiological reports can provide the much needed information for planning of effective health care delivery system.³⁻⁷

This study presents the basic analysis of radiological cases seen in Benin-City, Nigeria. It is hoped that the information presented might help to guide future health care delivery and to develop appropriate preventive strategies.

METHODOLOGY

The University of Benin Teaching Hospital (UBTH) was functionally opened in 1973. It provides specialist care for patients referred to

it from existing peripheral private clinics and hospitals, government and specialist's hospitals. It runs a general out-patient and accident and emergency unit (A&E), and these form an important source of its out-patients.

This was a descriptive study and patients who were referred to the X-ray Department of UBTH from both out-patient and in-patient departments made up the subjects for this study. Data was extracted from request cards. All cases seen over a one year period (January – December 2007) and information collected included some demographic data and reasons for referrals, these were analyzed, and presented in tables and expressed in frequency distribution.

RESULTS

A total number of 1,647 patients utilized the X-ray services at the University of Benin Teaching Hospital (UBTH) between January – December 2007. Of these 924 (56.2%) were females while 722 (43.8%) were males as shown in Table-I. Seven hundred and ninety four (48.2%) of the total cases seen were apparently well, while 853 (51.9%) presented with pathological conditions. Of the later cases, 374 (43.8%) were males, while 471 (56.2%) were females as shown in Table-II. Patients between the ages of 10-19 years and 20 – 29 years constituted a higher percentage of 24.2% and 24.7% respectively. Eighty-eight (10.3%) were below the age of 10years.

Table-I: Age and sex distribution of all cases patients studied.

Age Group (Years)	Male	Female	Total
	No (%)	No. (%)	No. (%)
<10	126 (7.6)	143 (8.7)	269 (16.3)
10-19	68 (4.1)	234 (14.2)	302 (18.3)
20-29	159 (9.7)	247 (15.0)	406 (26.7)
30-39	115 (7.0)	96 (5.8)	211 (12.8)
40-49	140 (48.5)	81 (4.9)	221 (13.4)
50-59	73(4.4)	39(2.4)	112(6.8)
>60	41 (2.5)	85 (5.2)	126 (7.7)
Total	722 (43.8)	925 (56.2)	1,647 (100.0)

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The different radiological diagnosis of the pathological cases seen is shown in Table-III. The ten leading conditions seen were cardiomegaly 140 (16.4%), pneumonia (non-tuberculous) 138 (15.8%), Pulmonary tuberculosis 113 (13.8%), Degenerative diseases of the spine, 71 (8.3%) and lower limbs fracture 68 (8.0%), others were fractures of skull 52 (6.1%), upper limb fractures 50 (5.9%), heart failure 47 (5.5%), abnormal intravenous urography 28 (3.3%), and sinusitis 20 (2.4%). Further analysis showed that among these ten diseases, the percentage of males was higher than females only among the cases of pneumonia (non-tuberculous), tuberculosis and heart failure. In the other cases, females were more than males.

Table-IV shows the list of principal radiological findings of Fitz Gerald – Finch's report of three cases seen both at the infirmary, Glasgow, United Kingdom and at AL-Quassimi Hospital, Sharjah, and Middle East. Arterosclerosis was the commonest disease in Glasgow, Monckeberg's sclerosis in the Middle East, while cardiomegaly topped the list in the present study in Nigeria.

DISCUSSION

The spectrum of pathological conditions found in this study was very different from a report of an analysis of cases seen in AL-Qassimi Hospital, Middle East and in Glasgow Infirmary, Glasgow, United Kingdom.⁷

Table-II: Age and sex distribution of patients with radiological abnormalities among the study population.

the study population.					
Age Group (Years)	Male	Female	Total		
	No. (%)	No. (%)	No. (%)		
<10	36(4.2)	52 (6.1)	88 (10.3)		
10 -19	65 (7.7)	141 (16.5)	206 (24.2)		
20 – 29	83 (9.7)	128 (15.0)	211 (24.7)		
30 – 39	60 (7.0)	49 (5.8)	109 (12.8)		
40 - 49	72 (8.4)	45 (5.3)	117 (13.7)		
50 - 59	37 (4.3)	20 (2.3)	57 (6.6)		
>60	21 (2.5)	44 (5.2)	65 (7.7)		
Total	374 (43.8)	479 (56.2)	853 (100.0)		

of patients investigated		
Diagnosis	Frequency	
	No. (%)	
Cardiomegaly	140 (16.4)	
Pneumonia (non-tuberculous)	135 (15.8)	
Pulmonary Tuberculosis	113 (13.2)	
Degenerative Disease of the Spine	71 (8.3)	
Lower Limb Fracture	68 (8.0)	
Skull Fracture	52 (6.1)	
Upper Limb Fracture	50 (5.9)	
Heart Failure	47 (5.5)	
Abnormal Intravenous Urography	28 (3.3)	
Sinusitis	20 (2.4)	
Acute Intestinal Obstruction	15 (1.8)	
Obstructive Upper Airway Disease	14 (1.5)	
Perforated Intestine	14 (1.5)	
Long bone Osteomyelitis	16 (1.9)	
Skull Osteomyelitis	11 (1.3)	
Osteoporosis	10 (1.2)	
Spina Bifida	12 (1.4)	
Rib fracture / Clavicular fracture	9 (1.1)	
Goitre	9 (1.1)	
Skull sub-galeal cyst	7 (0.8)	
Rheumatoid arthritis	9 (1.1)	
Congenital body defect	2 (0.2)	
Foreign body in the chest	2 (0.2)	
Total	853 (100.0)	

Table III: Radiological diagnosis

Monckeberg's vascular calcification in the peripheral vessels was found to be the commonest pathology in the Middle East. This was associated with Diabetes which is known to be very common among the local population there. In Glasgow, U.K, arterosclerosis was the commonest condition. Calcified arteromatous plaques are extremely common findings in Western population where there is a high incidence of arterial disease.⁷

In Benin City, Nigeria, the present study showed that cardiomegaly topped the list of diseases. Similar findings have been reported in Lusaka,⁸ Tanzania⁹ and in Nigeria¹⁰⁻¹¹ and therefore emphasizing the emerging pattern of diseases of the "so- called diseases of civilization" in developing countries.¹²⁻¹⁵

Pulmonary Tuberculosis was reported to be a major problems in this study and this was found to be similar to previous report in the Middle East, Nigeria and South Africa.^{2,16-19} This report only confirms the fact that tuberculosis is still not amenable to the various control programs in the population.

While dental fluorosis, bilhazia and dracunculosis were of local interests in AL-Qassimi Hospital in the Middle East, fractures of the skull, upper and lower limbs due to falls were important findings in University of Benin teaching Hospital, Nigeria. Females contributed higher percentages than males in all the fractured cases in this study. Some previous reports of fractures have been stated to be mainly due to falls.²⁰⁻²⁵ These reports stated that distal forearm fractures often occur in women with relatively active and good muscular functions. This should form the basis for further study to find out what is responsible for this.

Glasgow Royal Infirmary,	AI-Qassimi Hospital	Present study UBTH, Nigeria
Atherosclerosis	Monckeberg's sclerosis	Cardiomegaly without heart failure
Genitourinary Tuberculosis	Pulmonary tuberculosis	Pneumonia (non-tuberculous)
Gall stones	genito-urinary stones	Pulmonary tuberculosis
Osteoarthritis of the Hip	Osteoarthritis of the knee	Degenerative disease of the spine
Chronic pyelonephritis	Bilharzias	Lower limb fractures
Rheumatoid arthritis	Dracunculosis	Skull fractures
Paget's disease	Fluorosis	Upper limb fractures
Diverticular disease	Fracture thoraco-lumbar spine	Heart failure
Crohn's disease/ulcerative colitis	Fracture oscalis	Sinusitis
Peptic ulcer	Kerosene lung	Abnormal Intravenous Urography (IVU)

Table-IV: List of principal radiological findings in this study compared with findings in Glasgow Royal Infirmary U.K and Al-Qassimi, Hospital, Sharjah, Middle East.

CONCLUSION

Cardiomegaly was found to be the commonest disease in this study. This was different from the report of calcified arteromatous in Glasgow, in United Kingdom and Monckeberg's medical sclerosis in Sharjah, Middle East. Tuberculosis was reported to be a major problem inferring that the disease is still not amenable to various control programs in the population. Of local interest were fractures of the skull, upper and lower limbs.

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