

## Audit of Cardiothoracic Diseases seen at the National Cardiothoracic Centre Enugu Nigeria

1. S. A. EDAIGBINI FWACS

2. J. C. EZE FWACS, FACS

2. C.H. ANYANWU (OFR), FWACS, FRCS

1. Cardiothoracic surgeon and Lecturer Ahmadu Bello University, Zaria

2. Cardiothoracic surgeon and Lecturer University of Nigeria, Enugu

2. Emeritus Professor of Cardiothoracic Surgery and lecturer, University of Nigeria, Enugu

### ABSTRACT

**BACKGROUND:** The University of Nigeria Teaching Hospital, Enugu was designated the national centre of Excellence for Cardiothoracic diseases, because of the availability of skilled manpower. This study was therefore undertaken to see the pattern of cardiothoracic diseases managed in the surgical unit of the centre and to see if the objectives of its establishment are being achieved.

**METHOD:** A retrospective analysis of in-patient admission records managed surgically or conservatively between 2000 and 2004 was made.

**RESULTS:** A total of 704 cases were identified; 469(55.6%) men, 121 (17.2%)women and 114(16.2%) children. Majority, 163 (23.25%) were between the age range of 20-29years. Enugu, the State where the hospital is domicile had the highest admission rate of 318 patients (45.15%) while the 19 Northern States had a total of 67 patients (9.51%). Chest wall disorder constituted the majority of cases (28.69%) of which chest trauma from road traffic accident was the majority 49.6%. Most patients were hospitalised for an average of 2-4 weeks (56%).

**CONCLUSION:** The study revealed a low admission rate with a declining trend over the years and a skewed distribution of their origin. It also identifies militating factors and draws the attention of the relevant authorities to take necessary actions to stem this trend.

**KEY WORDS:** Audit, Cardiothoracic, diseases, trends, factors, Nigeria.

**WORD COUNT:** 200(Abstract), Main Text (1522)

### INTRODUCTION

The Federal Government of Nigeria designated some teaching hospitals in the country to serve as centres of excellence for selected specialities. This was with the aim of encouraging expertise and to offer excellence in service comparable to international standards. The University of Nigeria Teaching Hospital Enugu was designated, the Centre of Excellence for cardiothoracic diseases because of the availability skilled manpower in

field of surgery. This study tries to review the extent to which this aim has been achieved by looking at the pattern of diseases managed surgically at the centre while attempt is also made to explain the observed trend.

### MATERIAL/METHODS

The in-patient admission records were used to collect data on cardiothoracic cases admitted and treated in the surgical unit between January 2000 and December 2004. The names, hospital numbers, age, sex, tribe, address, state of origin, date of admission and discharge, diagnosis and treatment offered were recorded. All general surgery cases were left out. All cardiothoracic admissions without proper diagnosis were excluded

### RESULT

The analysis of the data is as follows; A total of 704 patients were admitted of which 469 (66.6%) were men, 121 (17.2%) were women and 114 (16.2%) were children. The year 2003 had the highest admission rate (figure I). **Table I**, shows distribution according to age and ward. The age range of 20-29 had the highest admission rate of 163 (23.15%) while children less than 1 month constituted 0.8 (6)

**Table II**, shows the distribution of the various pathologies. Chest wall disorders constituted 28.98% of which chest trauma from road traffic accident was the majority (specific details not included); 49.6%. Pleural space fluid collection constituted 20.31%. Lung parenchymal diseases constituted 9.52% of which 77.6% were in men; 59.7% of these lung parenchymal disease in men was lung cancer. Oesophageal diseases constituted 13.78% of cases and 58.76% of these were corrosive oesophageal stricture of which 61.40% were in men, 33.33% in children and only 5.26% were in women. 6.8% of the patients had pericardial diseases of which 68.75% had surgical intervention (pericardiotomy/ pericardiectomy). Acquired heart lesions constituted 4.26% of which 66.67% were heart blocks or arrhythmias and 16.67% had epicardial pacemaker insertion. Congenital heart lesions (CHD) constituted 7.39% of which 80.77% were children and the rest were in men. Mediastinal and diaphragmatic disorders constituted 1% and 0.9% respectively. 15 cases of open heart surgeries were done during this period. Vascular pathologies constituted 7.1%

(including aneurysms, vascular trauma, varicose veins, deep vein thrombosis and construction of arteriovenous fistula for hemodialysis. One patient (0.145%) came from Cameroon. Enugu the

state where the hospital is located had the highest admission rate of 318 patients (45.17%) while the whole of the nineteen northern states and Abuja had only 9.51% of the total admission (67 patients).

**Table I: Distribution of patients admitted at the National cardiothoracic Centre Enugu, Nigeria, according to Age and Wards.**

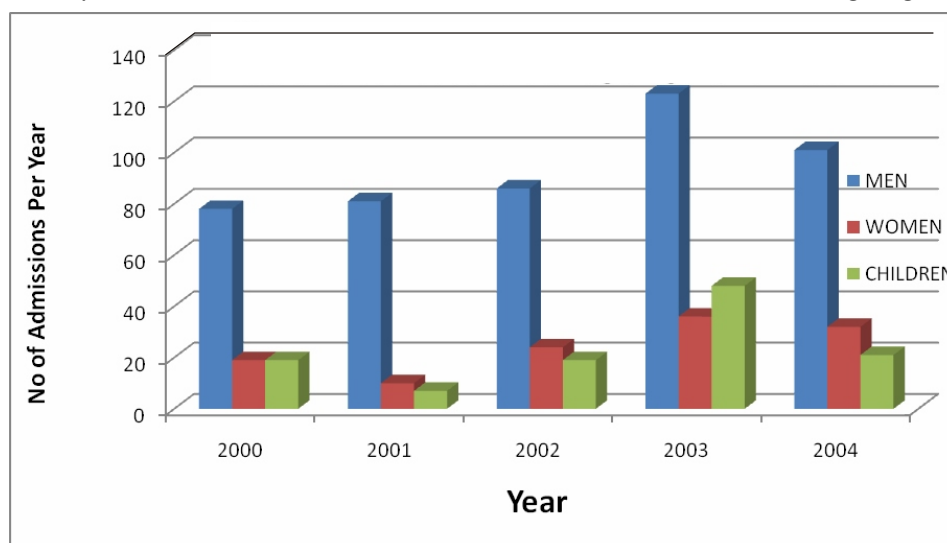
Age	Male Ward	Female Ward	Children Ward	Total
< 1 month	-	-	6	6
1 - 11 month	-	-	12	12
1 - 9 years	-	-	64	64
10 - 19 years	85	12	31	128
20 - 29 years	137	26	-	163
30 - 39 years	71	22	-	93
40 - 49 years	66	26	-	92
50 - 59 years	52	14	-	66
60 - 69 years	34	13	-	47
>70 years	25	8	-	33
<b>Total</b>	<b>469</b>	<b>121</b>	<b>114</b>	<b>704</b>

**Table II: Distribution of Diseases by Ward (Age/Sex)**

Pathology	Male Ward	Female Ward	Children Ward	Total
Chestwall Diseases	164	40	-	204 (28.98)
Pleural space collections	91	35	17	143 (20.31)
Lung Parenchymal Diseases	52	12	3	67 (9.52)
Oesophageal pathologies	59	7	31	97 (13.78)
Pericardial Diseases	28	13	7	48 (6.8)
Acquired Heart Diseases	15	6	9	30 (4.26)
Congenital Heart Diseases	10	-	42	52 (7.39)
Vascular Pathologies	43	7	-	50 (7.1)
Mediastinal Diseases	5	1	1	7 (1)
Diaphragmatic Disease	2	-	4	6 (0.9)
<b>Total</b>	<b>469(66.62)</b>	<b>121(17.12)</b>	<b>114(16.19)</b>	<b>704</b>

\* ( ) = Percentage

**Figure 1: Yearly admission of men, women and children at the National Cardiothoracic Centre Enugu, Nigeria, from 2000-2004**



## DISCUSSION

The department of surgery was one of the pioneer departments when the faculty of medicine was established at the University of Nigeria. On the first of February 1974, this department achieved a historical landmark, when the first open heart surgery was performed in Nigeria and black Africa<sup>1,10</sup> (Information also from Department of Surgery; 2004 Annual Report, UNTH, Enugu).

Between November 1975 to October 1979, 46 children aged between 24 hours and 16 years were treated surgically for cardiothoracic diseases at the University of Nigerian Teaching Hospital (U.N.T.H) Enugu. 25 children had congenital malformation and treatment offered included; Division of Patent Ductus Arteriosus (10), BT-shunt (7), Waterston-Cooley Shunt (3), ASD Closure (1) repair of Ectopia Cordis (1), Exploratory thoracotomy (3). 21 of the patients who had acquired lesions had pericardiectomy (10), pericardiostomy (4), mitral commissurotomy (7), Aortic valve replacement (1)<sup>2</sup> reported achievements. It was therefore not surprising that the Cardiothoracic Unit of UNTH was selected as the Centre of Excellence for the management of cardiothoracic diseases and in the training of surgical residents in this sub-specialty in 1982 (from personal communication C. H. Anyanwu). With this there was an added impetus to this milestone and probably at the climax of events, Aghaji reported in 1991, 225 BT shunts in 212 patients between January 1985 and December 1990<sup>3</sup>.

Having started early, one would expect this centre not only to be reckoned with nationally but even at the continental or intercontinental levels, but this appears not to be the case even though the outcome of this study shows little variation in terms of the number of cases seen per year. The variations in terms of pattern and number may be explained by the fact that more tertiary hospitals now manage some of the cases that were once the monopoly of the centre, greater health awareness and the fact that rich patients sometimes sought treatment in foreign countries rather than be treated here. In this study, chest wall disorders constituted the commonest pathology, of which 49.6% [100 patients] had either penetrating or blunt trauma from road traffic accident; Anyanwu reported 145 cases managed between 1975-1997<sup>4</sup> which shows an 18.4% decrease in accident rate; at this rate, it is still one of the highest in the world! However the findings of Thomas et al in Lagos (168 in 6 years) and Ali et al in Maiduguri (78 in 3 years) showed an increasing trend which is a more realistic finding giving the state of most of our roads and the road unworthiness of the vehicles that ply them<sup>5,6</sup>. While only 17 cases of pleural space disorders (Pleural effusion), were managed during the period under study (some of which were sterile/transudates), Anyanwu et al reported

120 cases of post-pneumonic pleural suppuration in children between 1975 and 1979<sup>7</sup>. While 57 cases of corrosive oesophageal stricture were managed during the period under study. Eze reported 69 cases between 1991 and 2001<sup>8</sup>. This shows an almost 100% increase in incidence rate and the reason for this could be as a result of worsening standard of living; given that these corrosive agents are utilised as a source of livelihood. While Anyanwu reported 86 cases of pericarditis between 1975 and 1989 (5.7 patients/year) we recorded 48 patients (9.6 patients/year). Again, this is as a result of the increased awareness of surgical remedy for complicated cases. 15 cases of open heart surgery were performed during this period (2.2 cases/year). This is obviously too low considering the capabilities of the centre, the amount invested in it and the large number of patients with surgical heart diseases. The reasons for this unimpressive rate had earlier been alluded to. It is important that every effort must be made to improve upon this record as smaller and less endowed African countries are performing incredibly more than we can imagine in this regard! As in most centres diaphragmatic and mediastinal disorders are rather uncommon (0.9%) ; Adegboye et al at the university college hospital Ibadan however reported a 6.5% incidence of diaphragmatic injury<sup>9</sup> following chest trauma (1778 cases) over a 20-year period (1978-1998). While vascular pathologies are not uncommon the outcome especially for emergency situations are influenced by the availability of grafts or late presentations. These notwithstanding, the variety of vascular cases handled in this centre include aneurysmorrhaphy (including aortic) post-traumatic arteriorrhaphy, by-pass surgeries for ischaemic vascular diseases etc.

The year 2003 had the largest admission rate (figure I) and this may be as a result of fewer industrial strikes by hospital staff. It is not surprising that men constituted about 66.6% of the admission giving that they are more prone to traumatic events and activities that have proven health risks e.g. smoking, alcoholism etc. Though it is not surprising that Enugu state had the largest number of patients, the distribution is skewed as 77.13% are from the Eastern part of the country while 10 states had no representation at all. The reason for this could be ignorance, poverty, distance (Sokoto and Maiduguri require an average of 2 days by road to get to Enugu) and the fact that other tertiary centres now manage some of the less intricate cases managed by the centre including pericardiectomy. The average duration of hospital stay was on the high side and this is attributable to hospital logistics, power outages, autoclave break down etc, all of which delay surgical operations after patients have been admitted<sup>10</sup>. Majority of those who stayed less than a week on admission, were those transferred to other units following proper diagnosis.

## CONCLUSION

The National Cardiothoracic Centre of Excellence has come a long way in managing virtually all cases that could be handled by any other centres not just in the sub-region but also in the world. While militating factors abound and the number of cases done especially open heart surgeries are on the decline, its achievements cannot be over-emphasised. All hands therefore must be put on deck by the governments, the hospital management and staff to improve upon the services, the image and the fortunes of the centre and so take it to its expected level of glory.

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