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Neurological disorders in the emergency centre of the Douala General Hospital, Cameroon: A cross-sectional study



Les troubles neurologiques au centre des urgences de l'hôpital général de Douala, Cameroun: étude transversale

Y.N. Mapoure^{a,*}, J.S. Ongono^b, C. Nkounlack^c, G. Beyiha^f, A.S. Mouelle^d, H.N. Luma^e

^a Department of Clinical Sciences, Faculty of Medicine and Pharmaceutical Sciences, University of Douala, Douala General Hospital, Douala, Cameroon

^b University of Douala, Douala, Cameroon

^c Buea Regional Hospital, Buea, Cameroon

^d Department of Clinical Sciences, University of Douala, Douala, Cameroon

^e Department of Internal Medicine, Douala General Hospital, University of Yaoundé I, Douala, Cameroon

^f Department of Surgery, Faculty of Medicine and Pharmaceutical Sciences, University of Douala, Douala General Hospital, Douala, Cameroon

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Introduction: The aim of this study was to determine the prevalence, aetiologies and outcome of neurological disorders at the emergency centre (EC) of the Douala General Hospital (DGH).

Patients and methods: A cross-sectional study was carried out from 1st January to 30th April 2014, at the EC of the DGH, in Cameroon. We included all patients above 15 years of age who presented with isolated or associated neurological complaints. Data collected for each patient were: socio-demographic, clinical and laboratory characteristics, time lapse before management and the prognosis. Patients with no definitive diagnosis made in the EC, had their files reviewed on the wards by the investigators for the final diagnosis and/or aetiology.

Results: Of 1844 patients who were consulted in the EC over the study period, 502 of them presented with neurological disorders (27.2%). The mean age was 44.4 ± 17.8 years with 53.6% males. The common symptoms were headache (47.8%), loss of consciousness (19.5%), lumbar pain (11%), hemiparesis (8.4%), and seizure (7%). Non-traumatic neurological disorders were common (86.1%). The common aetiologies were malaria (16.9%), stroke (13.5%), primary headaches (13.1%), head injury (12.9%) and metabolic encephalopathy (12.4%). Mean time lapse to be consulted by a general practitioner was 23.1 ± 20.7 min and 2.1 ± 1.3 h for neurologist's consultation. The time lapse to receive initial medical care was 26.3 ± 30.6 min. The mean duration to have an imaging result was 1.3 ± 0.9 h and 3.1 ± 1.7 h for laboratory tests. The in-hospital mortality rate of neurological disorders was 15.1%.

Conclusion: Neurological disorders are common in the emergency centre of the DGH. Aetiologies are diverse and in-hospital mortality is high. This highlights the need to organize neurologist calls at the EC and/or to improve the human resources capacity through regular training and evaluation.

Introduction: L'objectif de cette étude était de déterminer la prévalence, les étiologies et l'évolution des troubles neurologiques au centre des urgences (CU) de l'Hôpital Général de Douala (HGD).

Patients et méthodes: Une étude transversale a été réalisée du 1er janvier au 30 avril 2014 au CU de l'HGD, au Cameroun. Nous avons inclus tous les patients âgés de plus de 15 ans se présentant aux urgences en se plaignant de troubles neurologiques isolés ou associés. Les données recueillies sur chaque patient étaient les suivantes : sociodémographiques, cliniques et résultats des tests en laboratoire, temps écoulé avant la prise en charge et le diagnostic. Les dossiers des patients pour lesquels aucun diagnostic définitif n'était réalisé au CU ont été examinés par les enquêteurs dans les services vers lesquels ils avaient été envoyés afin d'obtenir le diagnostic définitif et/ou l'étiologie.

Résultats: Sur les 1 844 patients qui avaient consulté au CU au cours de la période d'étude, 502 présentaient des troubles neurologiques (27,2 %). L'âge moyen était de $44,4 \pm 17,8$ ans, 53,6 % étant des hommes. Les symptômes courants étaient les maux de tête (47,8 %), la perte de connaissance (19,5 %), les douleurs lombaires (11 %), l'hémiplégie (8,4 %) et les attaques (7 %). Les troubles neurologiques non traumatiques étaient courants (86,1 %). Les étiologies courantes étaient le paludisme (16,9 %), les accidents vasculaires cérébraux (13,5 %), les céphalées primitives (13,1 %), les traumatismes crâniens (12,9 %) et les encéphalopathies métaboliques (12,4 %). Le temps d'attente moyen avant d'être examiné par un médecin généraliste était de $23,1 \pm 20,7$ min et de $2,1 \pm 1,3$ heures avant d'être examiné par un neurologue. La durée moyenne pour bénéficier d'une prise en charge médicale initiale était de $26,3 \pm 30,6$ min. La durée moyenne pour obtenir un résultat d'examen radiographique était de $1,3 \pm 0,9$ heures et de $3,1 \pm 1,7$ heures pour obtenir des résultats d'examens du laboratoire. Le taux de mortalité hospitalière associé aux troubles neurologiques s'élevait à 15,1 %.

* Correspondence to Y.N. Mapoure. mapoureyacouba@gmail.com

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Conclusion: Les troubles neurologiques sont courants au Centre des urgences de l'HGD. Les étiologies sont variées et le taux de mortalité hospitalière est élevé. Cela souligne la nécessité de mettre en place un neurologue de garde au CU et/ou d'améliorer la capacité en termes de ressources humaines par une formation et une évaluation régulières.

African relevance

- Neurological disorders account for 27.2% of disease at the emergence centre.
- The common aetiologies were malaria, stroke, primary headache, head injury and metabolic encephalopathy.

Introduction

The emergency centre (EC) is usually the first place where acutely ill patients meet with medical personnel in a hospital setting. A few years ago, neurological disorders were less prevalent in the emergence centres.¹ However, this has changed, due to a better understanding of the physiopathology of these disorders, improved diagnostic methods using medical imaging (CT Scanning, Magnetic Resonance Imaging, and angiography), electrophysiology and nerve biopsy, as well as new therapeutic options. Most neurological disorders present as acute cases and thus require rapid and appropriate intervention. The profile of neurological disorders might vary from one continent to another, one region to another and even within the same country. In our setting, knowledge of the profile of these neurological emergencies will help in planning strategies for improved management. It was with this in mind that we carried out a cross-sectional study on the prevalence, aetiologies and outcome of neurological disorders at the EC of the Douala General Hospital (DGH) in Cameroon.

Methodology

This cross-sectional study was carried out in the DGH, situated in the city of Douala, the economic capital of Cameroon with a population of about 3 million inhabitants. The DGH is a tertiary health institution with a capacity of 325 beds. The neurology unit is staffed with four neurologists, and offers neurophysiological tests such as electroencephalography and electromyography. There is a neurosurgical unit with three neurosurgeons. The radiology department is equipped with a magnetic resonance imaging and an 8 barrettes CT scan machine.

Our study was carried out in the EC over a period of 4 months from January 1st to April 30th, 2014. We included all patients above 15 years of age who presented with neurological disorders and who consented to take part in the study. After a detailed physical and neurological examination, patients were investigated further with laboratory, electrophysiological and radiological tests as indicated. For each patient the following data were recorded: socio-demographic (age, sex, occupation, and health insurance), presenting complaints, physical examination findings, the diagnosis, and time lapse before management at the EC. Length of stay and outcome of the patients were also recorded. We defined as neurological disorder a patient who presented in the EC with neurological symptoms or signs relative to motor and/or sensitive functions,

myotatic and/or cutaneo-plantar reflex, cranial nerve abnormalities, coordination dysfunction, meningeal signs, cognitive function and altered conscious state. We classified headache according to the Headache Classification Subcommittee of the International Headache Society.² Data were collected, coded and saved via the SPSS software, version 20 of Windows. The Chi-squared and Student's *T* tests were used to compare proportions and means respectively. $p < 0.05$ was considered statistically significant.

An ethical clearance was obtained at the Institutional Ethical Committee of the Douala University. The aim of the study was explained to all patients or their families (in case of comprehension difficulties) and a written and informed consent obtained.

Results

Of the 1884 patients admitted in the EC of the DGH during the study period, 502 (27.2%), presented with neurological disorders. Our study population included 269 men and 233 women with no significant difference between the sexes ($p = 0.6$); giving a male/female sex ratio of 1.15. Patients' mean age was 44.36 ± 17.79 years with no significant difference between males and females ($p = 0.6$). 420 patients (83.7%) were salaried workers while 122 (24.3%) had health insurance. Most of the patients (75.5%) came from their homes or workplaces while 20.7% were from intermediary level hospitals and 3.8% from other hospitals of the central level.

Of the 502 patients, 362 (72%) presented solely with neurological complaints while 140 (28%) presented with both neurological and non-neurological complaints. Table 1 shows the reasons for neurological consultations. Amongst the 240 patients consulting for headaches, 174 (72.5%) were suffering from secondary headaches. Primary headache was observed in 66 patients (27.5%) of whom 34 (51.5%) and 32 (48.5%) were suffering from migraine and tension-type headache respectively. Aetiologies of secondary headache were:

Table 1 Neurological reasons for consultations in the emergency centre.

Reasons for consultations	Total number	Percentage
Headache	240	47.8
Loss of consciousness	98	19.5
Lumbar pains	55	11.0
Hemiparesis	42	8.4
Seizures	35	7.0
Incoherent speech	9	1.8
Disequilibrium	7	1.4
Speech disorders	6	1.2
Hemiparesis and aphasia	4	0.8
Paraesthesia	3	0.6
Absence	1	0.2
Amnesia	1	0.2
Visual disorders	1	0.2

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