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RESEARCH ARTICLE

PATHOLOGIES OF THE ELDERLY AND PHARMACOTHERAPY IN THE HEALTH AREA OF BIWONG-BANE, SOUTH CAMEROON

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Abstract

Objectives: The specific characteristics of the elderly physiopathology, such as polypathology and polypharmacy, arouse interest in the quality of the care offered to this age group. The study aimed to analyse the gap between the pathological and therapeutic profiles at the local level in Cameroon.
Method: This was a six-month cross-sectional situational analysis at the Biwong-Bane District Medical Centre in the South region of Cameroon. Pathological data were collected from the consultation register, and those related to therapeutics were taken from the drug inventory lists for the period of July 2019 to July 2020, using two separate reading grids. The 20th version of Statistical Package for the Social Sciences software was used for the analysis of the data set.
Results: For a total of 103 patient files, the mean age was 68.6±7.7 years with a sex ratio of 0.75. Total 21.7% of the population was aged ≥ 75 years. The main pathology groups were infectious diseases (40%) and diseases of the osteoarticular system (16.4%). Out the 140 occurrences counted, malaria, typhoid fever and high blood pressure were the most common at 26, 12 and 7 respectively. Polypathologies represented 28.2% of the sample. With regard to therapeutics, there was a concordance between prescriptions and available drugs, although stock-outs persisted, as with artesunate (10 months) and mineral supplements (6 months). Finally, the average number of active molecules administered per elderly person ≥75 years was 3.47.
Conclusion: The pharmacotherapy provided to the Third age remains poorly adapted, mainly due to the unavailability of drugs specific to the needs of this population.
Keywords: Elderly patient, pathologies of the third age, pharmacotherapy, South Cameroon.

INTRODUCTION

In 2017, the World Health Organisation (WHO) estimated that the number of people in the third age group (60 years and older) would increase from 900 million to 2 billion worldwide by 2050[1]. With the emergence of the Covid-19 pandemic and its specific risks for this population, namely higher mortality rates, neglect and poor treatment having a major impact on their economic and social well-being[2], this global trend represents somewhat of a public health concern in many respects. Although African countries are less affected, there is a significant demand for quality health care for non-Covid-19 related conditions that remains far from being met. Indeed, compared to the rest of the world, Africa benefits from 1.3% of financial resources and has only 3% of health professionals[3]. Moreover, the technical platforms and equipment are most often outdated and poorly adapted[4,5]. In addition, there is an unequal distribution of available resources depending on the level of the health system (peripheral, intermediate or central) or the geographical location (rural or urban)[6]. However, in terms of clinical management, the senescence that characterises the elderly describes a polypathology in which comorbidities and polymedication coexist, and which therefore requires appropriate pharmacotherapy, to ensure the safety of treatments and a better

continuum of care. While less than 2% of the drugs consumed in Africa are manufactured on the continent[3], there is the issue to ensure the continuous supply of safe essential medicines that meet the specific needs of the elderly. This is of particular interest in areas of difficult geographical access where stock-outs remain frequent in the health facilities[7].

Documentation on the quality of medicinal care for the elderly is still scarce in Cameroon. That is why this research focuses on the availability and adequacy of the drug prescriptions with respect to the target population pathological profile in the first line of the local tier in order to improve the supply of care and to promote the rational use of medicines in hospitals.

METHOD

A cross-sectional situational analysis was conducted at the Biwong-Bane District Medical Centre in the South Cameroon Region for six (06) months. This is the main health facility in the area and receives almost all the local patients. The study population consisted of files of elderly patients treated as outpatients and/or inpatients. Of these, the only inclusion criterion was to be at least 60 years old. While unreadability and non-exhaustiveness of the information sought were the exclusion criteria. The sampling was exhaustive.

The collection period for pathological and therapeutic data was one (01) year, from July 2019 to July 2020. Four (04) items namely: age, sex, diagnosis and drug prescription; were collected by means of a reading grid via the patient consultation register. The pathologies were presented according to the 10th edition of the WHO's International Statistical Classification of Diseases and Related Health Problems (ICD-10)[8]. With regard to the availability of therapy, the inventory lists from the collection period were used to identify the gaps between the needs expressed and the inputs provided, in terms of adequacy and physical accessibility. A second reading grid was used to specify the therapeutic classes according to the current National List of Essential Medicines (NLEM)[9], thus making it possible to exclude those not specific to the target and/or associated with particular conditions (paediatrics and pregnancy). The data reported in terms of numbers, frequencies, averages±deviations and extremes, were estimated using Statistical Package for the Social Sciences software 20.

This study was previously evaluated by the Institutional Ethics and Research Committee of the Faculty of Medicine and Biomedical Sciences of the University of Yaounde I, which granted it the ethical clearance Ref N°594/UYI/FMSB/VRDC/CSD in 2020. Afterwards, data collection in the field was initiated with authorization from the head of the targeted health structure. Also, the principle of confidentiality was duly respected.

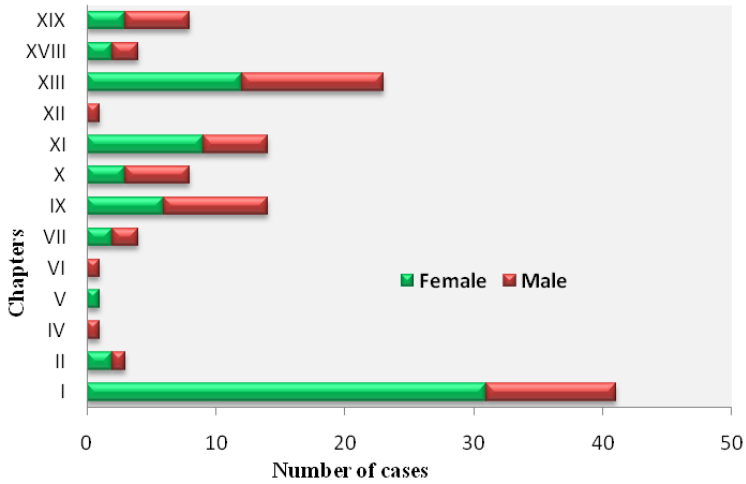

Figure 1: ICD-10 disease groups by gender.

I: Certain infectious and parasitic diseases; II: Neoplasms; IV: Endocrine, nutritional and metabolic diseases
V: Mental and behavioral disorders; VI: Diseases of the nervous system; VII: Diseases of the eye and adnexa
IX: Diseases of the circulatory system; X: Diseases of the respiratory system; XI: Diseases of the digestive system
XII: Diseases of the skin and subcutaneous tissue; XIII: Diseases of the musculoskeletal system and connective tissue
XVIII: Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified
XIX: Injury, poisoning and certain other consequences of external causes

RESULTS AND DISCUSSION

Sociodemographic data

Consultations for the elderly accounted for 14.8% of total consultations with 39 hospitalizations. The final sample consisted of 103 files. The sex ratio was 0.75. The average age was 68.6±7.7 years, with extremes of 60 and 95 years. Nearly 78.3% of the patients were aged ≤75 years, with a predominance of females (56.25%).

Pathological profile

This research reveals a sparse pathological picture. According to ICD-10, only 13 chapters were represented. Chapter I: Certain infectious and parasitic diseases (malaria and typhoid fever), and Chapter XIII: Diseases of the osteoarticular system, musculature and connective tissue (lumbar osteoarthritis and pain), were the majority classes at 40% and 16.4% respectively. Similar results found in Senegal revealed that, out of 1,145 elderly people received in the health facilities

studied, 31.2% suffered from infectious diseases, 15.1% from cardiovascular diseases, 10.5% from osteoarticular diseases, and 9.1% from digestive diseases. This is essentially linked, on the one hand, to the epidemiological profile of the sub-region, which shows a high proportion of malaria and infectious intestinal diseases, and on the other hand, to the physiopathology and lifestyle of the elderly themselves. The distribution of pathologies according to sex is illustrated by a predominance of cases of elderly women in groups of more than 10 (Chapters I, IX, XI and XIII), with a difference of up to 51.2% for Chapter I. This is illustrated in the Figure 1 Furthermore; this classification resulted in a total number of 60 diseases. The main one being malaria in its simple and severe forms, as described in the Table 1. Polypathological patients (with concomittant diseases) represented 28.2% of the sample. Those aged 75 and more were the most affected, at 41.4%.

Table 1: Most common pathologies (more than 5 cases).

Designation	Number of cases (N=140)	Percentage
Malaria	26	18.6
Typhoid fever	12	8.6
High blood pressure	7	5
Inguinal hernia	6	4.3
Lombar osteoarthritis	6	4.3
Urinary tract infection	5	3.6
Lombosciatica	5	3.6
Others pathologies	73	52.1

N= Total number of cases

Drug therapy

As regards drug therapy, the drug prescriptions were matched to the diagnoses made. Thus, for each disease group, at least one prescribed drug was available in stock. According to the current NLEM, there were 30 therapeutic classes available during the research period. Antibacterials (18.9%), vitamins and minerals (8.1%), antimalarials (6.8%), anaesthetics (5.4%), and non-steroidal anti-inflammatory drugs (5.4%) were the most represented. However, supply disruptions were observed for 4 active molecules, including mineral supplements, but also artesunate and artemether in injectable form, which are recommended as first and second line treatment for severe malaria[10]. Other drugs were affected by these stock-outs as detailed in Table 2. The reasons for stock-outs are associated with the inefficiency of the supply chain (Type of supply, suppliers, transit, etc.) and with a lack of financial resources allocated to the purchase of medicines. These bottlenecks are specific to health facilities at local level (Health centres, District medical centres and District hospitals) located in areas of difficult geographical access, as reported in some studies[7,11]. This is further complicated when dealing with a special needs population.

Table 2: Active molecules out of stock.

INN	Pharmaceutical form	Duration of break
Artesunate	injectable	10 months and more
Calcium	tablet	6 months and more
Magnesium	tablet	6 months and more
Diclofenac	injectable	30 days
Artemether	injectable	20 days

INN= International Nonproprietary Names

Although polypathology and adjacent polypharmacy increase with age, it is necessary to monitor for the development of iatrogenic pathological effects that cause complications. It is noted that 39 out of 103 elderly people had been hospitalized, which implies that more than half had received their care on an outpatient basis, thus making therapeutic follow-up difficult. This poses the limitation of collecting data related to iatrogeny. Nevertheless, research conducted in internal medicine departments in Cameroon showed that polymedication was a risk factor for the occurrence of iatrogenic events in the elderly[12]. And because polypharmacy complicates therapeutic strategies, monitoring and compliance with treatment, the French National Authority for Health recommends that, on average, daily consumption should be 3.6 drugs over the age of 65, 4 drugs between the ages of 75 and 84, and 4.6 after the age of 85[13]. Drug interactions and pharmacological changes in certain molecules should also be taken into account[14]. During the study period, no iatrogenic events were recorded in the patients' files. The average number of active molecules received was 3.47 in the over 75s with an extreme of 6 for 1 patient aged 80.

Ultimately, the sample size here, characterized by the category of health facility and its geographical location, can be considered a limitation of the study. Indeed, although the data resulting from this research are sufficient for extrapolation under similar conditions, they are not representative for a study on

the systemic management of diseases of the Third age on a national scale.

CONCLUSION

The drug management of the elderly diseases at local level is far from optimal. The variety of care needs and the complexity of this management requires a multidisciplinary approach, in which prescribers and providers collaborate with the informed involvement of the patient, in order to ensure the availability of the therapy and to mitigate any adverse iatrogenic event.

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Edo'o VD: writing original draft, literature survey. **Essomba TM:** methodology, formal analysis. **Essomba MJN:** formal analysis, review. **Kabir HMA:** investigation, conceptualization. **Nga EN:** critical review, supervision. **Essi MJ:** data curation, investigation. All authors revised the article and approved the final version.

AUTHOR'S CONTRIBUTION

The study was designed and conducted in collaboration of all the authors. They declare that they have written and approved the present manuscript.

DATA AVAILABILITY

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

CONFLICTS OF INTEREST

None to declare.

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