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Pre-Anesthetic Consultation at the University Clinics of Kinshasa: Patient Profile, Type of Surgery, Anesthetic Protocol

Berthe Barhayiga[1], Raïs N'sinabau[1, *], Gibency Mfulani[1], Adonis Ntoka[1], Odon Tshibangu[1], Gédéon Mpuramana[2], Eriksson Landu[1], Arthur Isamba[1], Carl Lemba[1], Joël Cimbila[1], Franchout Diakiese[1], Patrick Mukuna[1], Yves Mboloko[1], Philippe Azika[1], Wilfrid Mbombo[1]

[1]Department of Anesthesia-Resuscitation, University of Kinshasa, Kinshasa, Democratic Republic of Congo

[2]Department of Surgery, University of Kinshasa, Kinshasa, Democratic Republic of Congo

Email address:

barhayigaberthe@gmail.com (Berthe Barhayiga), rnsinabau@gmail.com (Raïs N'sinabau), gibencymfulani1990@gmail.com (Gibency Mfulani), ntokaadonis@gmail.com (Adonis Ntoka), tshibanguodonclausius@gmail.com (Odon Tshibangu), gdglasermpura@gmail.com (Gédéon Mpuramana), erikssonsheva@gmail.com (Eriksson Landu), arthurisambasakpa@gmail.com (Arthur Isamba), carlitolemba@gmail.com (Carl Lemba), cimbilajoel01@gmail.com (Joël Cimbila), fmbala@yahoo.com (Franchout Diakiese), patrickmukuna@yahoo.fr (Patrick Mukuna), yvesmboloko@yahoo.fr (Yves Mboloko), philaz03@gmail.com (Philippe Azika), pwmbombo@gmail.com (Wilfrid Mbombo)

[*]Corresponding author

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Abstract: *Introduction*: PAC is an element of anesthetic safety that makes it possible to collect information about the patient (history, physical examination), to assess the operative risk, to choose the technique of anesthesia and perioperative care best suited to the clinical condition of the patient. General objective was to describe the practice of PAC at the University Clinics of Kinshasa. *Methods*: This is a cross-sectional descriptive study carried out in Kinshasa from 1 January to 31 December 2021 (12 months), at the Department of Anesthesia and Resuscitation (ARD) of the University Clinics of Kinshasa. It involved all patients who had been consulted as part of a scheduled surgery, i.e. 443 patients. *Results*: The average age was 36.6 years with extremes of 7 days and 91 years. The female sex was predominant with 55.3%. Hypertension was the most found medical history in 13.5%. Gyneco-obstetric surgery (22.3%), otolaryngological surgery (13.8%) and neurosurgery (10.2%) were the most common of the surgical types. ASA I and ASA II patients were the most common (85.3%). General anesthesia accounted for 59% with Sevoflurane offered in 91% of general anesthesia. Spinal anesthesia accounted for 35.7%. *Conclusion*: The PAC is regularly performed in our environment in case of scheduled surgery and concerns all available surgical specialties.

Keywords: Pre-Anesthetic Consultation, University Clinics of Kinshasa, Anesthetic Safety, Types of Surgery, Types of Anesthesia

1. Introduction

The anesthesia process, like the piloting of fighter aircraft, is a risky process [1], which implies certain strategies to conduct it well.

Anesthesia risk assessment remains a constant preoccupation of the resuscitation anesthetist, as it involves estimating the probability of complications occurring during or following surgery [2]. And among the three measures that can reduce by 70% these complications or accidents linked to the practice of anaesthesia, is the pre-anaesthetic consultation (PAC), which must take place several days before the operation in appropriate premises and provided with the

necessary means [3, 4].

Described by Lee as early as 1994 [5], the PAC is therefore an element of anesthetic safety, as it allows a study of the patient's medical file, to collect information on the patient (history, physical examination), to request a specialized opinion or complementary examinations, to choose the anesthetic technique according to the type of surgery and the perioperative care best adapted to the patient's clinical condition, to inform the patient and to obtain his agreement [6-8].

Contrary to several developed countries such as France, the Democratic Republic of Congo, like several other developing countries, does not have legislation concerning anesthesia. Moreover, this consultation seems to be unknown, as well as the practice of anesthesia in general [9, 10]. Thus, the objective of our work was to describe the practice of PAC at the University Clinics of Kinshasa.

2. Material and Methods

This is a descriptive cross-sectional study conducted in Kinshasa from January 1 to December 31, 2021 (12 months) in the anesthesia and resuscitation departement (ARD).

The ARD has an equipped consultation office with at least two doctors and a nurse on duty every weekday. Consultations begin after the ARD medical staff and consultation reports are submitted to the specialists of the day before validation. The sampling of our study was exhaustive with consecutive recruitment (to be delete).

The study involved all patients who were consulted in the preoperative period at the ARD for scheduled surgery. All patients whose records contained the variables of interest were included in our study: age, sex, American Society of Anesthesiologists (ASA) classification, type of anesthesia, type of surgery.

Data were collected from the charts and then transcribed onto collection sheets. Data were processed using SSPS 20 software.

3. Results

In this study, we identified a total of 443 patients (out of a total of 526 consulted during the study period), of whom 245 records were women (55.3%) and 198 were men (44.7%), with a sex ratio of 0.8 (Table 1); 22.3% of the procedures were for gyneco-obstetrical surgery, 13.8% for ENT surgery and 10.2% for neurosurgery.

The mean age was 36.6±21.115 years with extremes from 7 days to 91 years. The most represented age range was 36 to 65 years (24.4%). Patients in this age category were more scheduled for general anesthesia (X2=64.081; ddl=18, p=0.000). Arterial hypertension (AH) was the most common medical history (13.5%).

The results in Table 1 indicate that 22.3% of the procedures were for gyneco-obstetrical surgery, 13.8% for ENT surgery and 10.2% for neurosurgery.

Analysis of the type of anaesthesia indicated shows that general anaesthesia was planned in 61.6% of cases, compared with 36.1% for locoregional anaesthesia (including 35.7% for spinal anaesthesia) and 2.3% for combined anaesthesia. Sevoflurane was the most indicated product for the maintenance of general anesthesia.

The majority of locoregional anesthesia was spinal anesthesia (97.5%). The majority of patients, regardless of their ASA class, were scheduled for general anesthesia; and for those in ASA class I and II, they were scheduled for general anesthesia in 52.6% and under locoregional anesthesia in the proportion of 31.2%.

Table 1. *Distribution of patient profile by type of anesthesia.*

Variables	Types of anesthesia				P-value
	General anesthesia N=273 (100%)	Epidural anesthesia N=2 (100%)	Spinal anesthésia N=158 (100%)	Combined anesthesia N= 10 (100%)	
Age					<0,001
>1 month	11 (4)	0	0	0	
1 month to 3 years	19 (7)	0	0	1 (10)	
4 to 12 years	35 (12,8)	0	4 (2,5)	1 (10)	
13 to 18 years	9 (3,3)	0	7 (4,4)	1 (10)	
19 to 35 years	70 (25,6)	0	65 (41,1)	0	
36 à 65 years	108 (39,6)	0	65 (41,1)	6 (60)	
>65 years	21 (7,7)	2 (100)	17 (10,8)	1 (10)	
Sex					0,625
Female	151 (55,3)	2 (100)	86 (54,4)	6 (60)	
Male	122 (44,7)	0	72 (45,6)	4 (40)	
Type of surgery					0,007
Digestive	29 (10,6)	0	7 (4,4)	1 (10)	
Cardiovascular	6 (2,2)	0	6 (3,8)	2 (20)	
General	21 (7,7)	0	17 (10,8)	1 (10)	
GO	40 (14,7)	2 (100)	56 (35,4)	1 (10)	
Maxillofaciale	13 (4,8)	0	0	0	
Neurosurgery	45 (16,5)	0	0	0	
Ophtalmologic	9 (3,3)	0	0	0	
ENT	61 (22,3)	0	0	0	
T-O	15 (5,5)	0	26 (16,4)	0	
Plastic	18 (6,6)	0	18 (11,4)	0	

Variables	Types of anesthesia				P-value
	General anesthesia N=273 (100%)	Epidural anesthesia N=2 (100%)	Spinal anesthésia N=158 (100%)	Combined anesthesia N= 10 (100%)	
Stomatological	9 (3,3)	0	0	0	
Urological	7 (2,6)	0	18 (17,7)	5 (50)	
Medical history					
High blood pressure	33 (52,4)	0	24 (54,5)	3 (100)	
High blood pressure associated	6 (9,5)	1 (100)	1 (2,3)	0	
Other	24 (38,1)	0	19 (43,2)	0	

N=Number of case; GO= gyneco-obstetrical surgery; ORL=oto-rhino-laryngologique; T-O = traumatology-orthopedic.

The ages were normally distributed (Figure 1).

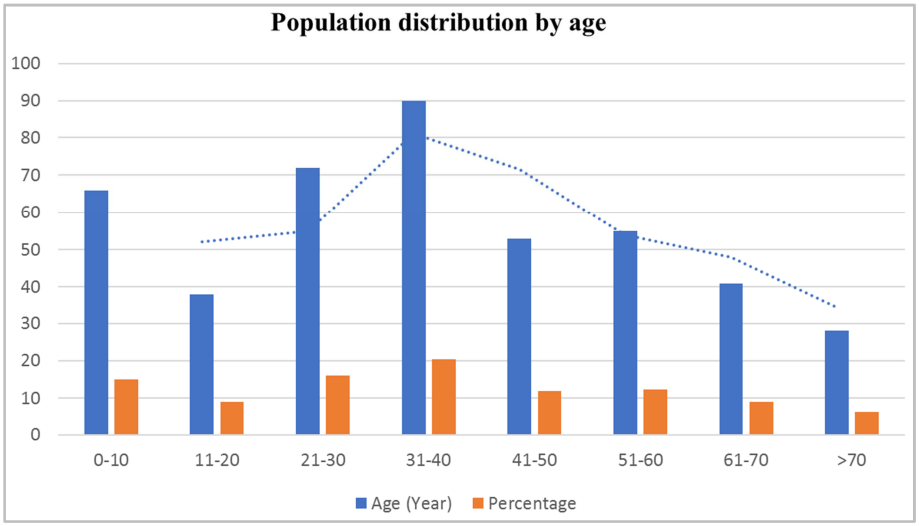

Figure 1. *Population.*

Table 2. *Distribution of anesthetic risk and prediction of intubation by type of anesthesia.*

Variables	Types of anesthesia				P value
	General anesthesia N= 273 (100%)	Epidural anesthesia N=2 (100%)	Spinal anesthesia N=158 (100%)	Combined anesthesia N=10 (100%)	
ASA					0,014
I	191 (70)	1 (50)	87 (55,1)	5 (50)	
II	42 (15,4)	0	50 (31,6)	2 (20)	
III	38 (19,9)	1 (50)	20 (12,7)	3 (30)	
IV	2 (0,7)	0	1 (0,6)	0	
Mallampati					0,080
I	211 (77,3)	0	126 (79,7)	10 (100)	
II	43 (15,8)	2 (100)	26 (16,5)	0	
III	18 (6,6)	0	6 (3,8)	0	
IV	1 (0,4)	0	0	0	

N= Number of case.

As for the ASA classification, 85.3% of the patients were classified as ASA I and II against 14.7% of them who were in ASA classes III to V. Patients with a Mallampati score I and II were predominant, 94.4% (Table 2).

4. Discussion

Regarding the profile of the patients, this study found a predominance of the female sex (55.3%) and the average age was 36.6 years. Santos *et al.* in Brazil found in a study performed only in adults, 64.8% of women [11]. In a previous study carried out in the DAR, Kabango *et al.* also found a female predominance of 67% [8]. Coulibaly *et al.* In Mali found this predominance in 53.1% [12]. Ouro-bang'na Maman *et al*. In Mali found a majority of young patients waiting for surgery [13, 14]. And Egbohou *et al.* In Togo found a female predominance of 58.5% and an average age of 36 years [15]. Our average age can be explained by the youth of our study population. The predominance of females may be related to the high frequency of gyneco-obstetrical surgery.

High blood pressure was found in 15.1% of cases, either alone (13.5%) or in association with other pathologies such as diabetes mellitus or obesity. Coulibaly *et al.* Found the same result in Mali and Santos *et al*. In Brazil found

hypertension in 50% [11]. Like other non-communicable diseases, hypertension is a real public health problem in Africa, with approximately 20 million people in Africa affected [16]. Indeed, in the context of the epidemiological transition, the management of therapeutic hypertension is deficient with nearly 20% of patients treated and less than 5% of them controlled [17].

The patients in this study were more ASA I (64.1%) and ASA II (21.2%) with a predominance in obstetrics and gynecology. These results are in agreement with those found by Kabango *et al.*, respectively 41.4% and 31.6% [8] in the same study setting. Coulibaly *et al*. In Mali also found a clear predominance of ASA I and II scores, 96.1% [12]. These results may be related to the young age of the majority of our patients; in fact, young age can preserve several chronic diseases often related to aging, which could increase the anesthetic risk. Also, these results can be explained by the fact that our study concerned only programmed patients.

The orotracheal intubation was expected to be easy in 94.4% of the patients (Mallampati score I and II). These results confirm the data in the literature [18, 19].

Gynaeco-obstetric surgery (22.3%), otolaryngology (ENT) in 13.8% and neurosurgery (10.2%) were the most frequent. Egbohou *et al*. In Togo and Kabango *et al.* found a predominance of gyneco-obstetrical surgery in 44% and 44.4% respectively [15, 8]. In a large study, Bond in Canada found gyneco-obstetrical surgery to be among the three most frequent surgeries [20]. This predominance could be explained by the gender of the patients. ENT surgery could be explained by the fact that it concerned in the majority of cases tonsillectomy and removal of adenoids, these two situations being present in more than a third of the patients under 18 years of age. Neurosurgery was indicated in almost half of the cases for a traumatic problem (embarrure, extradural hematoma, subdural hematoma, vertebro-medullary trauma), in particular road traffic accidents, which are quite frequent in Kinshasa and often due to two-wheeled vehicles [21]. These accidents are often treated late due to lack of resources and are therefore considered as programmed cases.

General anesthesia represented 61.6% against 35.7% for spinal anesthesia. Sevoflurane was the most proposed maintenance agent in the anesthetic protocol. These results can be explained by the type of pathology, but also by the poverty of our technical platform, which limits our anesthetic protocols. In fact, some procedures, especially those requiring peripheral blocks (axillary block, interscalene block), benefit instead from a general anesthesia for lack of anything better. Nevertheless, Sevoflurane is currently considered to be a safe and reliable agent [22], which can be used in adults and children [23]. Kabango *and al*. In Démocratic Républic of Congo and Magagi *et al*. In Niger also found this predominance of general anesthesia in 50.6% and 63,34% [8, 24].

5. Conclusion

CPA is regularly performed in our environment in case of scheduled surgery and concerns all available surgical specialties. It concerns mostly women and gyneco-obstetrical surgery. The results found imply the need for an evaluation of the anesthetic practice, which implies the inclusion of data collected during the intraoperative period, as well as the implementation of certain reforms in order to improve this anesthetic practice in general.

Conflicts of Interest

The authors declare no conflict of interest.

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