

## Research Article

### Characteristics of Post-Traumatic Generalized Acute Peritonitis in The University Hospital Center Salado Ouedraogo, Burkina Faso

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#### Abstract:

**Objective:** The purpose of this study was to describe the characteristics of post-traumatic generalized acute peritonitis in the department of general and digestive surgery of the University Hospital Center Yalgado Ouedraogo.

**Patients and methods:** This was a retrospective and descriptive study over a period of five years from January 1st, 2011 to December 31st, 2016, including all cases of post-traumatic generalized acute peritonitis operated at Yalgado Ouedraogo University Hospital Center.

**Results:** One hundred and one (101) cases of posttraumatic generalized acute peritonitis were recorded, representing a hospital frequency of 6.6% of generalized acute peritonitis and 2.4% of abdominal emergencies. The sex ratio (M / F) was 6.8 with an average age of 30 years. 63.4% of patients came from urban areas. The occurrence circumstance was a road traffic accident in 63.4% of the cases and in 76.2% of the cases, the contusions of the abdomen were the abdominal trauma involved. 73.8% of patients were treated surgically within 24 hours of admission and intraoperatively, hail injury was most noticeable in 87 cases. Parietal suppuration was the most common complication in 17.8%. The mortality was 2%.

**Conclusion:** The implementation of effective road traffic prevention strategies would reduce the incidence of post-traumatic generalized acute peritonitis at Yalgado Ouedraogo University Hospital Center.

**Keywords:** characteristic, peritonitis, post-traumatic, CHU-YO, Burkina Faso

#### Introduction

Peritonitis is defined as the inflammatory response of the peritoneum to an infectious or chemical attack [1]. It is called post-traumatic when it follows a perforation of an intra-peritoneal organ secondary to trauma of the abdomen. In Burkina Faso, the incidence of post-traumatic generalized acute peritonitis (PAG) has increased significantly from 2009 to 2013 [2, 3]. However, their characteristics are not yet well known. The purpose of this study was to describe the characteristics of post-traumatic PAG in the department of general and digestive surgery of the University Hospital Center Yalgado Ouedraogo (CHU-YO).

#### Patients and methods

This was a retrospective and descriptive study that was conducted in the general and digestive surgery department of CHU YO. The study ran from January 1st, 2011 to December 31st, 2016, during which we collected all cases of post-traumatic PAG that were supported in the service. We have not included, patients of both sexes whose age were greater

than or equal to 15 years. Data collection was retrospective. Hospital records, operative records and patients' clinical records were used to collect the following information: hospital frequency, age, sex, origin, occupation, circumstances of occurrence, abdominal trauma involved, the delay in surgical management, the lesions observed, the postoperative complications and the number of deaths.

#### Results

We recorded 101 cases of post-traumatic PAG during the study period in the general and digestive department of CHU YO, an annual average of 20 cases. During the same study period, 1530 cases of PAG were recorded and 4231 cases of acute surgical abdominal emergencies. Post-traumatic PAGs accounted for 6.6% of PAGs and 2.4% of acute abdomens. The average age of patients was 30 years with extremes of 15 years and 75 years. A male predominance was noted with 88 men (87%), a sex ratio of 6.8. Seventy-four patients (63.4%) came from urban areas. Merchants were the most represented in 38 cases, 43.7%. Road traffic accidents (RTAs) were the most common occurrence in 64 cases, or 63.4% (Table I).

**Table I:** Distribution of patients according to the occurrence of post-traumatic PAGs

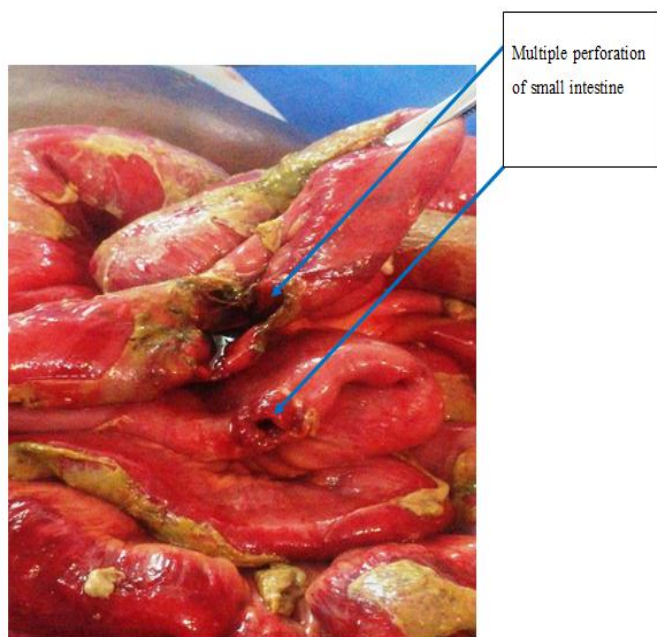
Occurrence of occurrence	Effective	Frequency (%)
Hunting accident	2	1.9
Voluntary injury and injury	21	20.8
CAB	64	63.4
Fall from the top of a tree / building	3	3
Landslide	2	2
Bucking of animals	1	1
Sport	8	7.9
Total	101	100.00

The abdominal contusion was the abdominal trauma involved in 71 cases or 70.3% (table II). Seventy-four patients (73.3%) had undergone surgical management within 24 hours of admission (Table II).

**Table II:** Distribution of patients according to the abdominal trauma involved post-traumatic PAG

Abdominal trauma	Effective	Frequency (%)
Abdominal contusion	71	70.3
Thoracoabdominal contusion	5	4.9
Total	101	100.00

The median supral and sub-umbilical laparotomy has been systematically practiced in all our patients. Hail injury was most noticeable (Figure 1).



**Figure 1:** Ileal perforations following an abdominal contusion by AVP [Image emergency department general and digestive surgery CHU-YO 30-05-2016]

The postoperative course was complicated in 31 cases (30.7%). These were specific postoperative complications distributed as well: parietal suppuration in 18 cases (58%), evisceration in 4 cases (12.9%), sepsis in 3 cases (9.7%), postoperative peritonitis in 3 cases (9.7%) and digestive fistula in 3 cases (9.7%). We recorded 2 death cases with a mortality rate of 2%. These deaths occurred in a septicemia chart.

**Discussion**

Of 1530 PAGs operated during the study period, 101 were for post-traumatic PAGs. Post-traumatic PAGs accounted for 6.6% of PAGs during the study period. This frequency is high compared to those reported through studies in Burkina Faso on the PAG:1.8% in 2009 by Ouangré et al [2], 4.1% in 2013 by Ouedraogo. L et al [3]. This variation in frequency shows that the incidence of post-traumatic PAGs is increasing significantly in Burkina Faso. This could be explained by the increase in the use of two-wheeled means of transport in Burkina Faso, on an underdeveloped and inadequate urban road network, thus increasing the risk of road traffic accidents, which are the source of abdominal trauma, sources of Post-traumatic PAG. Indeed, through a study on the hospital frequency of traffic accidents in Burkina Faso, Ouedraogo. LT et al reported an increase in the risk of accidents due to a notable shortage of public transport contributing to the development of particular types of transport with a proliferation of two-wheeled vehicles [4]. In Burkina Faso, post-traumatic PAGs are restricted to young males, whose average age is 30, who are victims in 63.4% of traffic accidents. These characteristics corroborate those of Ouedraogo LT et al, who reported that the victims of road traffic in Burkina Faso are predominantly male, with an average age of 33.7 years [4]. The same authors also noted that most traders who are most exposed to these road traffic accidents in 31.7%. This finding is similar to our result where 43.7% of our patients were marketers. This could be explained by the fact that traders are more mobile, which would predispose them to traffic accidents. Road traffic accidents, even though they made most of the circumstances of post-traumatic PAGs, other circumstances of occurrence have played a significant role. This is particularly the case of voluntary assault and battery that come in second place after traffic accidents. Indeed, they accounted for 20.8% of the circumstances of occurrence and this could be explained by the increase in crime in urban Burkina Faso and the political situation of Burkina Faso in 2014 marked by the popular uprising and different 2015 military crises, including the coup in September. In our series, the abdominal trauma in question was mostly abdominal contusions in 70.3% of the cases and in 60.4% of the cases, the circumstances of occurrence causing the abdominal trauma were road accidents. The high

frequency of abdominal contusions in road traffic accidents was also noted by Zida in Burkina Faso and ITEKE in DR Congo, who reported frequencies of 88.6% and 50%, respectively [5, 6]. Therapeutic management of our patients has been rapid with nearly ¾ operated within the first 24 hours of admission to surgical emergencies. This could be explained by the care without prepayment by our patients. Management consisted of intensive intravenous resuscitation with correction of hydroelectrolytic disorders. This resuscitation without delaying the procedure should precede it for four to six hours and should be combined with broad-spectrum antibiotic therapy [7, 8, 9]. Several studies classify the delay in therapeutic management as the major prognostic factor of generalized acute peritonitis [10, 11]. This short period of care could certainly explain our relatively low mortality rate of 2%. On the other hand, postoperative complications were numerous with a rate of 30.7% and mainly dominated by parietal suppurations. These are the main postoperative complication reported in African studies of peritonitis [12, 13, 14].

### Conclusion

This study made it possible to characterize post-traumatic generalized acute peritonitis operated at CHU YO. We found that the hospitable frequency of these posttraumatic PAGs was significantly increased and that they were confined to young, male, trader, victims of road traffic accidents. Post-traumatic PAGs thus constitute a public health problem in Burkinabe urban areas. Implementing effective road traffic prevention strategies would reduce the impact

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