

Peptic Esophagitis in Hospitals in Ouahigouya: Epidemiological and Diagnostic Aspects (about 2578 Cases)

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Abstract

Objective: The aim of the study was to study the epidemiological and diagnostic aspects of peptic esophagitis in a hospital setting in Ouahigouya using the endoscopic approach. **Patients and Methods:** This was a retrospective, cross-sectional and descriptive study over a 10-year period from March 1, 2014 to February 29, 2024. Patients diagnosed with peptic esophagitis by upper digestive endoscopy and classified according to Savary Miller into 4 grades were included in the study. Using a data collection form, patient data were collected in 3 private and one public health facility in the city of Ouahigouya, Burkina Faso. **Results:** During the study period, 4078 esophageal lesions were found out of a total of 5278 upper digestive endoscopies. Among these esophageal pathologies, there were 2578 cases of peptic esophagitis, or 43.52%, coming in first place in decreasing order of frequency. The annual frequency was 257.8 cases. There were 1459 women and 1119 men, or a sex ratio of 1.3. The average age was 39.62 years, with extremes of 8 and 98 years. The professions were dominated by housewives with 995 cases (38.60%), followed by farmers/breeders with 488 (18.89%) and civil servants with 191 cases (17.07%). The indications for endoscopic examination were dominated by epigastralgia with 1670 cases (46.47%), followed by gastroesophageal reflux disease (GERD) with 356 cases (9.9%) and ulcer syndrome with 257 cases (7.15%). The endoscopic aspects were dominated according to the Savary Miller classification by Grade I with 2237 (86.77%), followed by Grade IV in 255 cases (9.89%). **Conclusion:** Peptic esophagitis is a common pathological entity in upper gastrointestinal endoscopy. It predominates in women and young adults. It is rare before the age of 20 and common between

30 and 40 years. The high rate of endobrachyoesophagus (EBO) in Grade IV cases reported by our study requires patient monitoring.

Keywords

Peptic Esophagitis, Upper Digestive Endoscopy, Ouahigouya, Burkina Faso

1. Introduction

Peptic esophagitis corresponds to an inflammatory condition of the esophageal mucosa due to the corrosive action of reflux material during gastroesophageal reflux disease (GERD). When this GERD is prolonged and recurrent, it becomes pathological. Several factors favoring GERD, such as hiatal hernia, cardiac incontinence, and obesity due to increased intra-abdominal pressure, can contribute to its occurrence. It is the most common disease of the esophagus. Its development can be punctuated by complications, the most feared of which is endobrachyoesophagus (EBE) because of its risk of degeneration [1]. The prevalence of reflux esophagitis is approximately 40% to 50% in symptomatic subjects [2]. In Burkina Faso, some studies had already focused on peptic esophagitis [3]-[5]. A more recent study carried out in a hospital setting in Ouagadougou on peptic esophagitis reported an endoscopic prevalence of 35.13% [6]. In Ouahigouya, on the other hand, no study had been carried out on esophageal pathology using the endoscopic approach. The aim of this study was to study the epidemiological and diagnostic aspects of peptic esophagitis in Ouahigouya using the endoscopic approach.

2. Materials and Methods

This was a retrospective, cross-sectional and descriptive study which covered the period from March 1, 2014 to February 29, 2024, *i.e.*, 10 years. It was carried out in the digestive endoscopy units of 3 private health structures in the city of Ouahigouya and the Regional Teaching hospital of Ouahigouya.

The patients in our study came from the city of Ouahigouya, other provinces in the Northern region, and towns and villages bordering Mali. Indeed, the Malian border is located 57 km from the city of Ouahigouya, which is the capital of the Northern region of Burkina Faso. Its population is estimated at 124,587 inhabitants, including 61,451 men and 63,136 women, according to the 5th general census of the population and housing of Burkina Faso in 2022 [7].

The study included patients aged 4 years and older, of both sexes, of all origins and socio-professional categories in whom peptic esophagitis was diagnosed by upper digestive endoscopy. These peptic esophagitis lesions were described and classified according to Savary-Miller [3] into 4 grades:

- Grade I: Isolated, non-confluent erosions.
- Grade II: Longitudinal, confluent erosions, not covering the entire circumference.

- Grade III: Longitudinal, confluent erosions, covering the entire circumference.
- Grade IV: Ulcers, strictures, endobrachyoesophagus.

Patients whose reports were unusable were not included in the study.

The endoscopy equipment consisted of a FUJINON brand video endoscope with 3 types of gastroscope, namely: FUJINON EG 200 FP, FUJINON EG 201 FP, FUJINON EG 250 WR. They were powered by a light source and connected to a FUJINON EVE EPX 201 brand processor, which generates the images on a monitor (screen) in the 3 private health structures. A KARLSTORZ brand gastroscope was used at the CHUR of Ouahigouya.

Since the quality of the endoscopic examination can only be optimized through good preparation, this had to be rigorous. The patient had to be fasting, with the last meal having been the day before at 8 p.m. at the latest, which allowed for at least 8 hours of gastric emptying.

Disinfection of the endoscope was carried out according to the current procedures of the French Society of Digestive Endoscopy (SFED) [8]. After cleaning and brushing the operating channel in a soapy solution with HEXANIOS® or CYTEAL®, depending on market availability, high-level disinfection was carried out by immersion in a 5% glutaraldehyde solution (STERANIOS®) for at least 10 minutes. The patient was placed in the left lateral decubitus position and a bite block was inserted into the mouth after removal of any dentures. The endoscopist explored the upper digestive tract in axial vision and then in retrovision when withdrawing the endoscope.

Data were collected using a survey form specifying the patient's marital status, socio-demographic characteristics, indications for upper digestive endoscopy, and results. These endoscopic results were recorded by 3 Hepato-gastroenterologists.

The collected data were analyzed on a microcomputer using Epi-Info software version 7.2.6.0. Statistical comparisons were performed using the χ^2 test with a significance level of $p < 0.05$.

3. Results

During the study period, 4078 esophageal lesions were found out of a total of 5278 upper digestive endoscopies. Among these esophageal pathologies, there were 2578 cases of peptic esophagitis. They represented 43.52% of all esophageal pathologies and came first in order of frequency. The annual frequency was 257.8 cases/year as reported in **Figure 1**.

There were 1459 women and 1119 men, a *sex ratio* of 1.3. The average age was 39.62 years, with extremes of 8 and 98 years. There was a female predominance in almost all age groups except at the extremes of life (see **Figure 2**).

The professions were dominated by housewives with 995 cases (38.60%), followed by farmers/breeders with 488 (18.89%) and civil servants with 191 cases (17.07%) (see **Table 1**).

The indications for endoscopic examination were dominated by epigastralgia, as shown in **Table 2**, with 1670 cases or 46.47% followed by GERD with 356 cases (9.9%) and ulcer syndrome with 257 cases (7.15%). The endoscopic aspects were

dominated according to the Savary Miller classification.

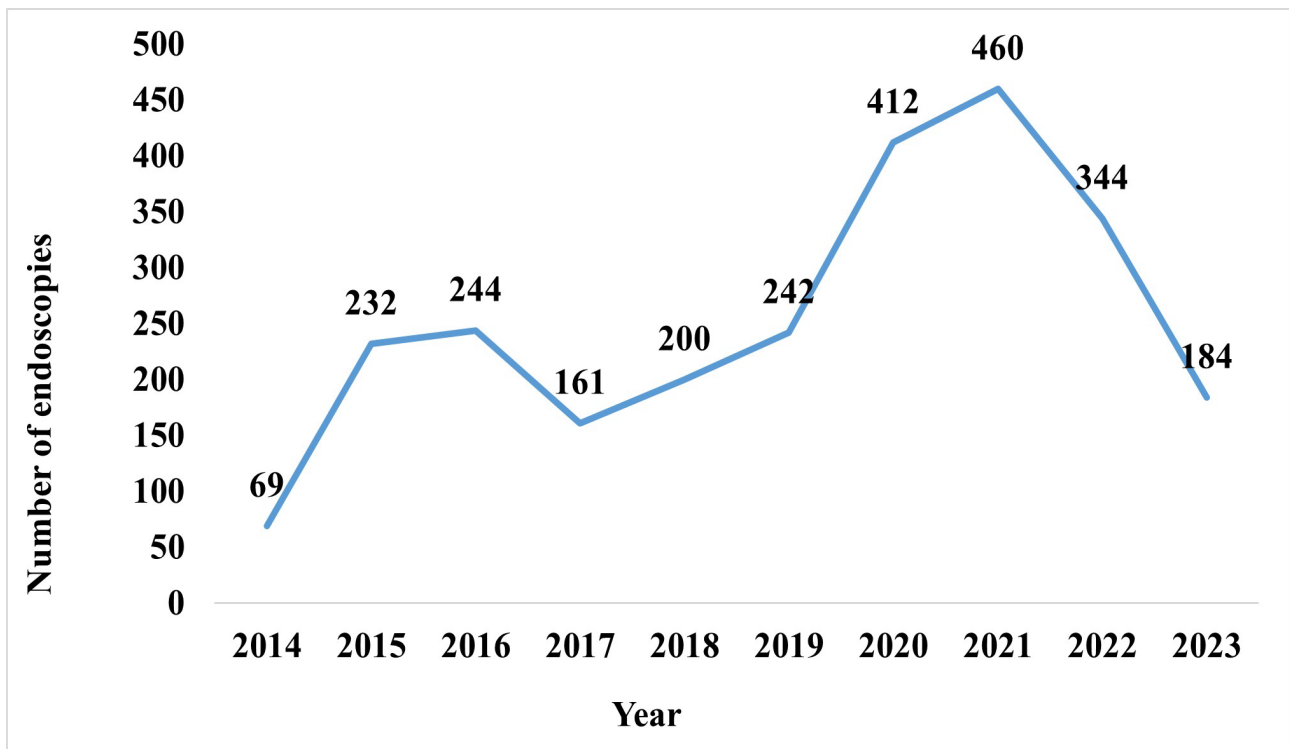


Figure 1. Distribution of peptic esophagitis by year.

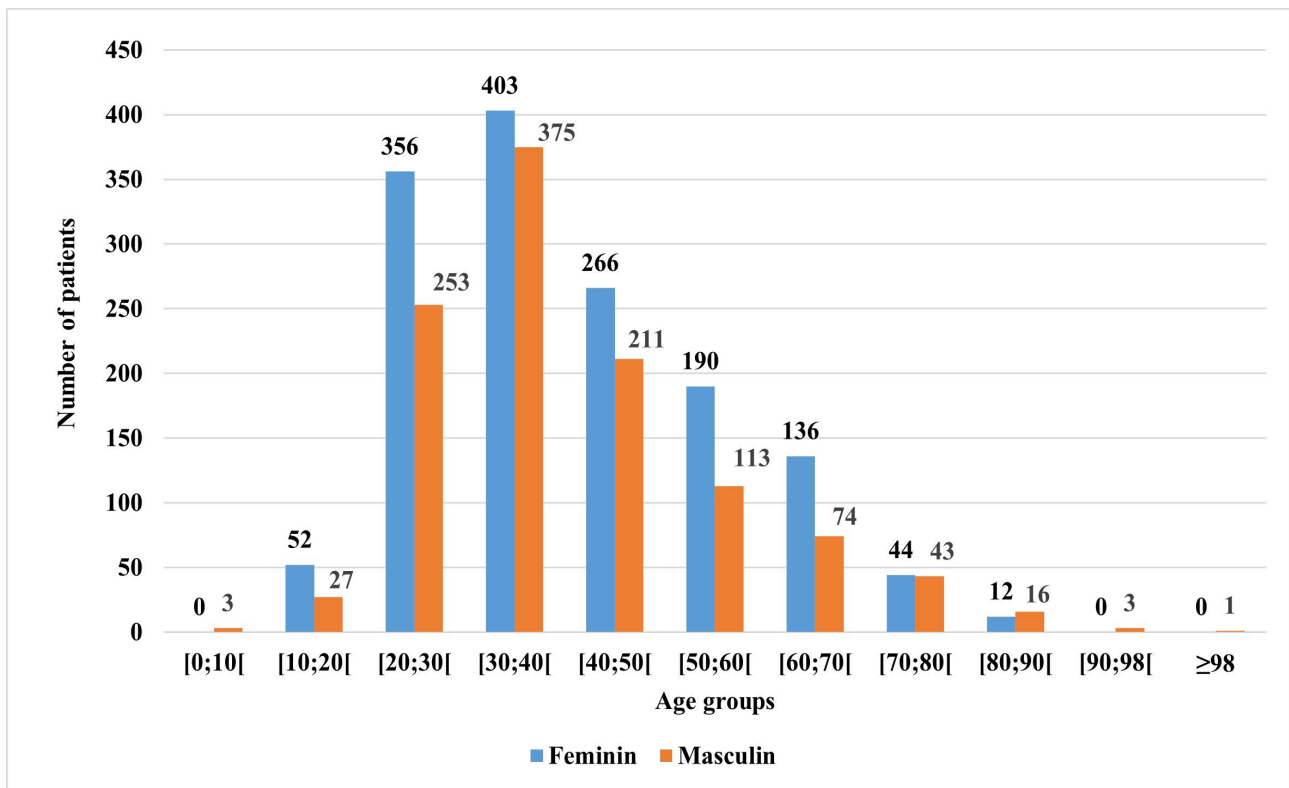


Figure 2. Distribution of patients by age and gender.

Table 1. Distribution of patients according to profession (n = 2578).

Occupation	Effective	Percentage (%)
Housewife	995	38.6
Farmer/breeder	487	18.9
Civil servants	440	17
Students	191	7.4
Traders	189	7.3
Informal sector	79	3
Gold miner	69	2.7
Not specified	39	1.5
Military/paramilitary	25	1
Religious	21	0.8
Driver	20	0.7
Retirement	15	0.6
Without current occupation	5	0.2
Tacheron	2	0.08
Worker	1	0.04
Total	2578	100

Table 2. Distribution of indications for upper digestive endoscopy (n = 2578).

Indication	Number	Frequency (%)
Epigastralgia	1670	46.47
GERD	356	9.91
Ulcer syndrome	257	7.15
Heartburn	181	5.03
Nausea/Vomiting	121	3.36
Retrosternal pain	119	3.31
Abdominal pain	89	2.47
Dysphagia	80	2.23
Suspicion of hiatal hernia	72	2.79
Regurgitation	63	1.75
Sign of portal hypertension (PHT)	56	1.56
Dyspepsia	56	1.56
Control	52	1.45
Not specified	49	1.36
Hematemesis	42	1.17
Eructation	40	1.11
Esophageal foreign body sensation	32	0.89

Continued

Odynophagia	30	0.83
Hiccups	28	0.78
Melena	26	0.72
Chest pain	22	0.61
Anemia	16	0.45
General health deterioration (GHD)	16	0.45
Hypersalivation	15	0.42
Suspected esophagitis	15	0.42
Hepatomegaly	14	0.39
Cough	11	0.31
Epigastric mass	6	0.17
Halitosis	6	0.17
Others*	54	1.50

Others*: Taking non-steroidal anti-inflammatory drugs, accidental ingestion of foreign bodies, dysphonia, cholestasis syndrome, aphasia, pharyngitis, mouth ulceration, laryngitis, postural syndrome, health check-up, bloating, palpitation, digestive candidiasis, functional bowel disorders (FBDs).

A patient could have several indications.

Grade 1 peptic esophagitis predominated in 86.77% of cases, followed by Grade 4 in 9.89% of cases. These data are presented in **Figure 3**.

Grade 4 peptic esophagitis was dominated by endobrachyoesophagus (EB) in 92.16%, and monitoring of ulcers in 6.27% of cases, as shown in **Table 3**.

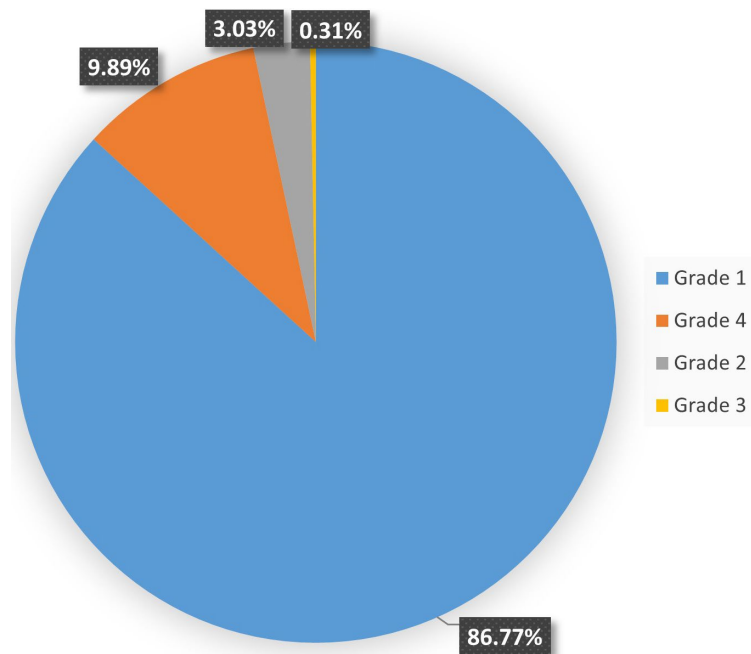


Figure 3. Distribution of peptic esophagitis according to the Savary Miller classification (n = 2578).

Endobrachyoesophagus predominated in 235 cases, or 92.16% of the population, followed by ulcers in 16 cases, or 6.27% (see **Table 2**).

Table 3. Distribution of lesions according to Savary Miller Grade IV (n = 255).

Grade IV injury	Effective	Percentage (%)
EBO	235	92.16
Ulcer	16	6.27
Stenosis	04	1.57
Total	255	100

We found a female predominance of Grade-I peptic esophagitis, *i.e.*, 58.16% compared to 41.84% in men. The frequencies of Grade-II (57.69%), Grade-III (75%) and Grade-IV (53.73%) peptic esophagitis were, on the contrary, higher in men than in women.

The distribution of peptic esophagitis according to grade and gender is given in **Table 4**.

Table 4. Distribution of cases of peptic esophagitis according to grade and sex.

Peptic esophagitis	Total	Female gender		Male gender	
		Effective	%	Effective	%
Grade I	2237	1454	58.16	936	41.84
Grade II	78	33	42.31	45	57.69
Grade III	8	2	25	6	75
Grade IV	255	118	46.27	137	53.73

Chi² = 22.9511, p = 0.000.

Grade I peptic esophagitis was significantly associated with young female subjects under 60 years of age (p = 0.000 < 0.05). Grades II, III and IV were significantly associated with male subjects under 60 years of age (p < 0.05).

The distribution of peptic esophagitis according to grade, sex and age is given in **Table 5** and **Table 6**.

Table 5. Distribution of peptic esophagitis according to grade, sex and age (n = 2578).

Variable	Effective	% Grade I	Khi ²	p	% Grade II	Khi ²	p
Age (years)							
<60	2249	88.73	340,306	0.000	75.64	97,167	0.002
≥60	329	11.27			24.36		
Sex							
Male	1124	41.84	212,538	0.000	57.69	64,961	0.011
Female	1454	58.16			42.31		

Table 6. Distribution of peptic esophagitis according to grade, sex and age (n = 2578) (continued).

Variable	Effective	% Grade III	Khi ²	p	% Grade IV	Khi ²	p
Age (years)							
<60	2249	37.50	178,320	0.000	79.22	163,596	0.000
≥60	329	62.50			20.78		
Sex							
Male	1124	75	32,177	0.073	53.73	117,996	0.001
Female	1454	25			46.27		

4. Discussion

We faced some difficulties inherent in the retrospective nature of the study, with sometimes incomplete information on the bulletins; of certain information on the upper digestive endoscopy report registers (dietary habits, lifestyle, anthropometric data such as body mass index, abdominal circumference, the notion of stress factor, etc.). These data would have allowed us to carry out in-depth analyses on the risk factors.

Peptic esophagitis was the most common esophageal lesion, representing 43.52% (2578) of esophageal diseases. The average annual incidence was 257.8.

An almost identical frequency was found in Madagascar by Peghini *et al.* [9] (43.77%); in Ouagadougou by Ouattara *et al.* [6] (40.86%) on esophageal pathology in a hospital environment in Ouagadougou. On the other hand, in France, Canard [10] reported a frequency slightly lower than ours (38.14%).

This frequency is, however, higher than that reported by Bougouma *et al.* [11] (36.19%) in Ouagadougou and Kondé *et al.* [12] (35.1%) in Mopti.

It was lower than that reported by Moussavou-Kombila *et al.* [13] (61.22%) in Gabon. The duration of certain studies shows that peptic esophagitis has been a predominant esophageal pathology for a long time, and is still increasing today, perhaps because of the westernization of our lifestyle.

This difference in prevalence between studies may be related to the duration of the studies and the size of the study populations. This increase in peptic esophagitis could be explained by the increasingly worrying growth of factors predisposing to GERD, such as smoking, alcohol consumption, a diet too high in fat, obesity, and hiatal hernia.

In the study by Cissé *et al.* [14] in Bamako, smoking, with 18.18%, was the predominant factor in the lifestyle of patients with peptic esophagitis. For Ouattara *et al.* [6] in Ouagadougou, the lesions most frequently associated with peptic esophagitis were gastropathies (37.62%) and hiatal hernia (24.41%). For Cissé *et al.* [14] in Bamako, on the other hand, these were gastroduodenal ulcers (37.5%) and hiatal hernia-gastric tumors (25%).

The average age of our patients was 39.62 years, with extremes of 8 and 98 years. This result is similar to those of other authors:

Ouattara *et al.* [6], in Ouagadougou, reported an average age of 37.63 years \pm 13.83 years with extremes of two months and 99 years.

It is lower than that of Cissé *et al.* [14] in Bamako, where the average age was 48.27 \pm 16.36 years with extremes of 19 - 72 years.

The highest frequency of peptic esophagitis (30.18%) was observed in patients aged between 30 and 39 years. This could be explained by the fact that our population is predominantly young. It differs from that reported by Cissé *et al.* [14] in Bamako (50 - 59 years).

The predominance was female with 1459 women or 56.59% of the population and the sex ratio was 0.76. Ouattara *et al.* [6], through their study on peptic esophagitis in health structures in Ouagadougou, also reported a female predominance of 57.34% and a sex ratio of 0.74.

However, Cissé *et al.* [14] in Bamako reported a male predominance with a sex ratio of 2.14.

Taking estrogen-progestin contraceptives, anti-inflammatories, increased consumption of spicy foods, stress, a sedentary lifestyle, and obesity could be factors explaining this female frequency, all of which promote GERD. This is about a hypothesis that could not be tested due to the lack of lifestyle and clinical data, as mentioned in the limitations.

Female predominance was observed in most age groups except at the extremes of life. The most affected age group was 30 to 39 years, with a female predominance (403 cases or 15.63%). The frequency of the condition in young female adults is probably due to the greater use of contraceptive methods, in this case oesoprogestogens, anti-inflammatories (in front of cycle disorders such as dysmenorrhea, dystrophies, torsions), spices in the diet, and the permanent stress to which this population is exposed.

Housewives (FAF) (38.60%), farmers/breeders (18.89%) were the most represented. This can be explained by the fact that this class of the population is exposed to difficult socio-economic conditions. It is subject to permanent stress, promoting GERD through hypersecretion of acid, with the more or less long-term consequence of peptic esophagitis.

The main indication for digestive endoscopy was epigastralgia, with a frequency of 46.47% (1670), followed by GERD (9.91% or 356 cases). This result is similar to that of Maïga *et al.* [15] in Bamako, in whom epigastralgia represented 49.66% and GERD 18.12%.

It is in fact lower than that of Ouattara *et al.* [6], which reported 59.96%.

The anxiety generated by this upper digestive symptom, which can be seen in certain cardiac and respiratory pathologies, pushes patients to consult in these specialties, from where they are referred for Gastroenterology consultation after having eliminated the suspected organ. This situation, associated with the fact that the pyrosis has an epigastric starting point, explains the high frequency of this indication. For a long time, authors such as Maïga *et al.* [15], Klauser *et al.* [16] had ex-

plained this high prevalence of epigastralgia in peptic esophagitis by the frequent involvement of the lower esophagus, and the possible association of esophagogastrroduodenal affections.

In the presence of ulcer syndrome (7.15% in our study), it is necessary to consider looking for esophagitis.

The predominance of Grade I peptic esophagitis according to the Savary-Miller classification (86.77%) was also reported by other authors including: Bougouma *et al.* [11] (87.63%), Ouattara *et al.* [6] (88.05%) and Soulama [17] (98.24%) all in Ouagadougou. Early consultation of patients could explain the discovery of peptic esophagitis lesions at the early stage.

On the other hand, Cissé *et al.* [14] in Bamako, and Peghini *et al.* [9] in Madagascar reported that this predominance concerned Grade II peptic esophagitis with respective rates of 31.8% and 91.89%.

Our study reported a predominance of EBO in 92.16% (235 cases) in Savary Miller Grade IV found in 255 of our patients, followed by ulcer (6.27%) and esophageal stenosis (1.57%).

The frequencies of peptic esophagitis Grade II (56%), Grade III (75%) and Grade IV (53.75%) were higher in men than in women (respectively 44%, 25% and 46.25%). This same observation was made by Ouattara *et al.* [6] and Sia [5], in whom men were more represented except for Grade I. In men, this high frequency of peptic esophagitis, observed after the 6th decade, indicates that esophagitis worsens with age; it is associated with prolonged exposure to risk factors, associated with the chronicity of gastroesophageal reflux. Thus, it can be admitted that in the context of senile neuropathy, the appearance of motor disorders of the esophagus and the alteration of the lower esophageal sphincter could promote GERD and disorders of esophageal clearance.

Grade I peptic esophagitis was significantly more frequent in females under 60 years of age ($p < 0.05$). Grades II, III and IV were more frequent in males over 60 years of age ($p < 0.05$) with a statistically significant difference. Ouattara *et al.* [6] found this trend in a study on peptic esophagitis in health facilities in Ouagadougou, with this higher frequency of Grades II and III in males over 40 years of age. The earlier recourse to care by women compared to men could well explain these results.

5. Conclusion

Peptic esophagitis is a common pathological entity in upper digestive endoscopy. It predominates in women and young adults. It is rare before the age of 20 and frequent between 30 and 40 years. Although Grade I peptic esophagitis predominated in our series, Grade IV came in second place with 92.16% of EBO. Monitoring of the endobrachyoesophagus is essential to avoid missing dysplasia and later esophageal adenocarcinoma.

Conflicts of Interest

The authors declare no conflict of interest regarding the publication of this article.

References

- [1] Schmutz, G. (1999) Imagerie de l'appareil digestif supérieur: Œsophagite peptique et reflux gastro-œsophagien. Masson, 52-63.
- [2] Ruigómez, A., García Rodríguez, L.A., Wallander, M., Johansson, S., Graffner, H. and Dent, J. (2004) Natural History of Gastro-Oesophageal Reflux Disease Diagnosed in General Practice. *Alimentary Pharmacology & Therapeutics*, **20**, 751-760. <https://doi.org/10.1111/j.1365-2036.2004.02169.x>
- [3] Gnimien, H. (2013) La pathologie duodénale en milieu hospitalier à Ouagadougou: Approche endoscopique. À propos de 18993 fibroscopies digestives hautes. Thèse de Doctorat en Médecine, Université de Ouagadougou.
- [4] Gué, M.J. (1993) La pathologie digestive haute au Centre Hospitalier National Yalgado Ouédraogo: Bilan de deux ans d'endoscopie digestive haute. Thèse de Doctorat en Médecine, Université de Ouagadougou.
- [5] Sia, L.M. (2012) La pathologie œsophagienne en milieu hospitalier à Ouagadougou: Approche endoscopique à propos de 14576 fibroscopies digestives hautes. Thèse de Doctorat en Médecine, Université de Ouagadougou.
- [6] Ouattara, Z.D., Zoungrana, S.L., Héma/Soudré, S., Ouédraogo, S., Guingané, A.N., Koura, M., *et al.* (2020) Les œsophagites peptiques dans les structures sanitaires à Ouagadougou: Aspects épidémiologiques et diagnostiques. Approche endoscopique à propos de 7051 cas. *Annales de l'Université Joseph Ki-Zerbo-Série D*, **24**, 35-46.
- [7] Institut National de la Statistique et de la Démographie (INSD) (2022) Cinquième recensement général de la population et de l'habitation du Burkina Faso. 135.
- [8] Marchetti, B., Boustière, C., Chapuis, C., Systchenko, R., Arpurt, J., Barrioz, T., *et al.* (2007) La désinfection du matériel en endoscopie digestive: Fiche de recommandation de la SFED. *Acta Endoscopica*, **37**, 699-704. <https://doi.org/10.1007/bf02962020>
- [9] Peghini, M., Rajaonarison, P., Pecarrere, J.L., Rakotomalala, M. and Ramarokoto, N. (1996) La fibroscopie œso-gastro-duodénale: Analyse descriptive de 12000 examens et problèmes rencontrés sous les tropiques. *Médecine Tropicale*, **56**, 89-94.
- [10] Canard, J.M. (2005) Deux jours d'endoscopie en France: Résultats de l'enquête 2004. Données complètes. *La Lettre de la SFED*, **27**, 254-268.
- [11] Bougouma, A., Sombié, A.R., Bougouma, C.T.H., Sermé, A.K., Ilboudo, P.D. and Bonkougou, P. (2008) La pathologie digestive haute à Ouagadougou au Burkina Faso: Approche endoscopique. *Burkina Médical*, **12**, 73-86.
- [12] Kondé, A., Sidibé, L., Diarra, A., Fofana, Y., Samaké, D., Katilé, D., *et al.* (2023) Aspects endoscopiques des pathologies œsophagiennes à Mopti. *Health Sciences and Disease*, **24**, 150-152.
- [13] Moussavou-Kombila, J.B., Bignoumba, R. and Abdou Raouf, O. (2006) Place de la pathologie œsophagienne dans les affections digestives au Gabon. *Médecine d'Afrique Noire*, **53**, 213-218.
- [14] Cissé, M. and Tata, D. (2010) Étude des œsophagites peptiques à l'hôpital mère-enfant de Bamako et à l'infirmerie de garnison de Kati. Thèse de Doctorat en Médecine, Pharmacie et Odontostomatologie, Université des Sciences, des Techniques et des Technologies de Bamako.
- [15] Maïga, M.Y., Traoré, H.A. and Touré, F. (1996) Étude des œsophagites à Bamako: À propos de 228 cas. *Médecine d'Afrique Noire*, **43**, 228-232.
- [16] Klauser, A.G., Schindlbeck, N.E. and Müller-Lissner, S.A. (1990) Symptoms in Gastro-Oesophageal Reflux Disease. *The Lancet*, **335**, 205-208. [https://doi.org/10.1016/0140-6736\(90\)90287-f](https://doi.org/10.1016/0140-6736(90)90287-f)

- [17] Soulama, Y. (2005) Les manifestations extra-digestives du reflux gastro-œsophagien: Aspects épidémiologiques, diagnostiques, thérapeutiques et évolutifs. Thèse de Doctorat en Médecine, Université de Ouagadougou.