

Retraction Notice

Title of retracted article: **Pediatric Esophagogastroduodenoscopy at Yopougon Teaching Hospital: Socio-Demographic Characteristics, Indications, Findings and Management**

Author(s): Bhérat Armel Kouadio, Tanoh Kassi François Eboua, Marie-Hélène Ake-Assi, Aboubacar Demba Bangoura, Affoué Ekou Charlotte Niamien-Attaï, Bossoma Guylaine Aka, Assamala Marielle Ehile, Laurence Ya Adonis-Koffy akeamh@yahoo.fr

Email:

Journal: Open Journal of Pediatrics (OJPED)
 Year: 2019
 Volume: 9
 Number: 1
 Pages (from - to): 19 - 28
 DOI (to PDF): <http://dx.doi.org/10.4236/ojped.2019.91003>
 Paper ID at SCIRP: 1330681
 Article page: <https://www.scirp.org/Journal/PaperInformation.aspx?PaperID=90001>

Retraction date: 2019-04-28

Retraction initiative (multiple responses allowed; mark with **X**):

- All authors
 Some of the authors:
 Editor with hints from Journal owner (publisher)
 Institution:
 Reader:
 Other:

Date initiative is launched: 2019-01-18

Retraction type (multiple responses allowed):

- Unreliable findings
 Lab error Inconsistent data Analytical error Biased interpretation
 Other:
 Irreproducible results
 Failure to disclose a major competing interest likely to influence interpretations or recommendations
 Unethical research
 Fraud
 Data fabrication Fake publication Other:
 Plagiarism Self plagiarism Overlap Redundant publication *
 Copyright infringement Other legal concern:
 Editorial reasons
 Handling error Unreliable review(s) Decision error Other:
 Other:

Results of publication (only one response allowed):

- are still valid.
 were found to be overall invalid.

Author's conduct (only one response allowed):

- honest error
 academic misconduct
 none (not applicable in this case – e.g. in case of editorial reasons)

- * Also called duplicate or repetitive publication. Definition: "Publishing or attempting to publish substantially the same work more than once."

History

Expression of Concern:

yes, date: yyyy-mm-dd

no

Correction:

yes, date: yyyy-mm-dd

no

Comment:

This paper is retracted by the editor handling error.

This article has been retracted to straighten the academic record. In making this decision the Editorial Board follows [COPE's Retraction Guidelines](#). Aim is to promote the circulation of scientific research by offering an ideal research publication platform with due consideration of internationally accepted standards on publication ethics. The Editorial Board would like to extend its sincere apologies for any inconvenience this retraction may have caused.

Pediatric Esophagogastroduodenoscopy at Yopougon Teaching Hospital: Socio-Demographic Characteristics, Indications, Findings and Management

Bhérat Armel Kouadio^{1*}, Tanoh Kassi François Eboua¹, Marie-Hélène Ake-Assi¹, Aboubacar Demba Bangoura², Affoué Ekou Charlotte Niamien-Attai¹, Bossoma Guylaine Aka¹, Assamala Marielle Ehile¹, Laurence Ya Adonis-Koffy¹

¹Pediatrics Service, Yopougon Teaching Hospital, Abidjan, Côte d'Ivoire

²Hepato-Gastroenterology Service, Yopougon Teaching Hospital, Abidjan, Côte d'Ivoire

Email: *bheratarmel@yahoo.fr, ebouatk@yahoo.fr, akeam@yahoo.fr, bangoura.2009@live.fr, charlotteniamien@gmail.com, gbossoma@gmail.com, mayal28fr@yahoo.fr, kofflaur@hotmail.com

How to cite this paper: Kouadio, B.A., Eboua, T.K.F., Ake-Assi, M.-H., Bangoura, A.D., Niamien-Attai, A.E.C., Aka, B.G., Ehile, A.M. and Adonis-Koffy, L.Y. (2019) Pediatric Esophagogastroduodenoscopy at Yopougon Teaching Hospital: Socio-Demographic Characteristics, Indications, Findings and Management. *Open Journal of Pediatrics*, 9, 19-28. <https://doi.org/10.4236/ojped.2019.91003>

Received: January 8, 2019

Accepted: January 15, 2019

Published: January 18, 2019

Copyright © 2019 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Introduction: Since its first use in children, esophagogastroduodenoscopy (EGD) has rapidly developed into one of the most commonly used explorations in pediatric gastroenterology. Unlike developed countries, EGD is only performed by non-pediatric specialists and their studies on the child are not exclusively carried out at Yopougon Teaching Hospital. The aim of this study was to describe the socio-demographic characteristics of the children concerned, the indications of the EGD, the findings at the digestive level and their therapeutic implications in our pediatric ward at Yopougon. **Methods:** This cross-sectional study was conducted from January 2015 to December 2017 from EGD reports of admitted children in the pediatric service at Yopougon Teaching Hospital (teaching hospital) (Abidjan, Cote d'Ivoire). **Results:** Thirty-five (35) EGD reports were collected during this period, representing 1.7% of all EGD performed during this period at any age. The age of the patients ranged from 3 months to 14 years. The sex ratio was 1.2. EGD was performed in the majority of cases in a context of caustic poisoning (62.9%). The indications were dominated by vomiting (80%), gastrointestinal bleeding (22.8%) and epigastralgia (17.1%). EGD was pathological in 51.4% (n = 18). These results revealed gastropathies (28.6%), caustic lesions (14.3%), esophageal varices (8.6%), duodeno-gastric reflux (8.6%) and bulbar ulcers of non-toxic origin (5.7%). Most of the management consisted in the eradication of *Helicobacter pylori* (14.3%), blood transfusion (14.3%) and β -blocking

therapy (8.6%). **Conclusion:** The achievement rate of EGD in children was low. There was a predominance of male infants. The indications of EGD were dominated by vomiting and caustic ingestions. Non-caustic gastropathies and caustic lesions were the most observed. The detection of *Helicobacter pylori* in half of the cases explored suggests the systematic performance of biopsies in children.

Keywords

Upper Gastrointestinal Endoscopy, Child, Abidjan, Cote d'Ivoire

1. Introduction

Esophagogastroduodenoscopy (EGD) in children has evolved over the last 30 years with a growing number of diagnostic and therapeutic applications. In developed countries, this examination is performed by pediatric endoscopy specialists in specialized centers [1] while in our country they are only carried out by non-pediatric endoscopy specialists (for adults). Some studies on various aspects of EGD were carried out by these specialists of Yopougon Teaching Hospital in collaboration with those of Cocody [2] [3] but none exclusively at the pediatric department of the Yopougon Teaching Hospital.

In order to present the experience of our pediatric ward located in a tropical hospital, we undertook this study whose aim was to describe the socio-demographic characteristics of the children concerned, the indications of the EGD, the digestive findings and their therapeutic implications.

2. Methods

We conducted a cross-sectional study from January 2015 to December 2017 based on EGD reports from children who age ranged from 1 month to 15 years, admitted in pediatric service at Yopougon Teaching Hospital (teaching hospital) (Abidjan, Ivory Coast). The EGD were performed by an expert gastroenterologist, assisted by nurses specialized in digestive endoscopy, using a video endoscope brand Fujinon EG200, 6 to 7 mm caliber.

Patients and their parents were psychologically prepared with explanations concerning the course of the examination. Premedication has been administered to children included either Xylocaine gel 2%, Midazolam 2.5 mg IVD or Diazepam 0.5 mg IVD only for older children and adolescents. Tolerance was assessed on the existence or not of incidents (excessive hypersialorrhea, weakness, loss of consciousness, cardiorespiratory disorders). Incomplete reports were excluded from the study.

For each patient included in the study we specified the following data:

- Socio-demographic data: age, sex
- Clinical data: medical history, indications from the EGD

- Endoscopic data: premedication, tolerance, results of the EGD; whether to perform biopsies
- Therapeutic data: symptomatic and etiological treatment of findings

The children included in the study, were divided into 3 groups according to the age: infants (1 to 24 months); younger children (2 to 5 years old); older children (5 to 10 years old) and teenagers (11 to 15 years old).

Data collection was performed using the endoscopy register of the study center and a pre-established survey form for this purpose.

3. Results

We collected thirty-five (35) EGD reports performed during this period on a set of 2056 EGD at any age. These 35 EGD accounted over 1.7% of all esophagogastroduodenoscopy performed in children during the study period of 3 years. The age of the patients ranged from 3 months to 14 years with an average age of about 54 months so 4 years 6 months. The most affected age group was infants (57.1%). There was a male predominance with a sex ratio of 1.2. Nine patients had a history of epigastralgia (n = 6), hematemesis (n = 6), gastritis (n = 4), ulcer (n = 1) or post hepatic C cirrhosis (n = 1). The indications were dominated by vomiting (80%), caustic ingestion (57.1%), upper gastrointestinal bleeding (22.8%) and epigastralgia (17.1%) (Table 1). EGD performed in a poisoning context accounted for 62.9% of cases. The most common poison were caustics (95.4%).

The average completion time of the EGD was 3 days and 4 hours. Patients received premedication in 94.3% of cases (n = 33) in children and adolescents with almost 63% (n = 22) for Xylocaine gel. For these children, tolerance was poor in 23 (65.7%), average in 5 (14.3%) and good in 7 (20%). All of the EGD performed without major incident were for diagnostic purposes. EGD was normal in 48.6% of cases (n = 17) with 94.1% (n = 16) in the context of poisoning. It was pathological in 51.4% of cases (n = 18). Non-toxic digestive lesions were observed in 57.1% of cases (n = 20). They were most often in the stomach (40%, n = 14) and the esophagus (17.1%, n = 6) (Table 2).

The endoscopic findings were: gastropathy (25.7%, n = 9), caustic lesions (14.3%, n = 5), esophageal varices (n = 3), duodeno-gastric reflux (8.6 n = 3), bulbar ulcer (5.7%; n = 2) and gastric ulcer (2.8%; n = 1).

Table 1. Indications for esophagogastroduodenoscopy (EGD).

Indications	Frequency (n = 35)	Percentage (%)
Vomiting ± Hypersalivation	28	80
Ingestion of caustics	20	57.14
Digestive Bleedings	08	22.86
Epigastric pain	06	17.14
Other abdominal pain	04	11.43

Table 2. Main etiologies of digestive lesions objectified at the EGD.

Etiologies of digestive lesions	Frequency (n = 35)	Percentage (%)
Normal result	17	48.6
Pathological result	18	51.4
<i>Esophagus</i>	5	14.3
Esophageal varices	03	8.6
Esophagitis	01	2.8
Caustic stenosis	01	2.8
<i>Cardia</i>	01	2.8
Mallory-Weiss Syndrome	01	2.8
<i>Stomach</i>	14	40
Non-caustic gastropathy	09	28.6
Caustic gastritis	04	11.4
Gastric ulcer	01	2.9
<i>Bulb</i>	02	5.7
Bulbar ulcer	02	5.7
<i>Duodenum</i>	03	8.6
Duodeno-gastric reflux	03	8.6

The protocol for the eradication of *Helicobacter pylori* (14.3%), blood transfusion (14.3%) and β -blocking therapy (8.6%) accounted for most of the treatment (Table 3).

4. Discussion

Esophagogastroduodenoscopy (EGD) has improved the management of upper gastrointestinal disorders. It allows not only the visual exploration of the digestive mucous membranes but also the performance of biopsies and therapeutic gestures [4] [5].

We performed 35 EGD in children. This low rate of achievement of the EGD in children is common to African studies in which this rate varies from 1.6 to 6.5% [6] [7]. The reason they evoke for this is not clear, but it could be postulated that hospital care-seeking for Gastrointestinal disease is less common among their population. A more likely explanation is underutilisation of the facility by the paediatric patients due to the low awareness by the paediatric care providers of its existence and the indications for its use. The relatively low proportion (29%) of the cases that were direct referrals from other facilities also lend credence to this explanation. Otherwise, the frequent failure of the technical facilities and the lack of pediatric gastroenterology department in these countries explain the fact that EGD there is not commonly performed in children. In our case, it could be explained by several reasons presented chronologically. First of all, because patients do not always understand, despite the doctor's explanations, the link between digestive signs and the need for EGD, which they find traumatic for

Table 3. Management of digestive lesions.

Terms of management	Frequency (n = 35)	Percentage (%)
Blood transfusion	05	14.3
Eradication of <i>Helicobacter pylori</i>	05	14.3
AMO Protocol (*)	03	8.6
ACMO protocol (**)	02	5.7
β -blockers	03	8.6
Antireflux/Prokinetics	03	8.6
Indication for surgical treatment	02	5.7

*AMO: Amoxicillin + Metronidazole + Omeprazole; **ACMO: Amoxicillin + Clarithromycin + Metronidazole + Omeprazole.

children. To this explanation, added the common says who find the examination always unpleasant and painful, which contribute in encouraging the refusal of this examination by the parents. The high cost of the EGD not really affordable for some parents is another obstacle. The repeated failures and the recurrent unavailability of the video-endoscope within the center, the absence of pediatric gastroenterologist and sometimes the unavailability of adult gastroenterologists, the low demand for this examination by the practitioners are also many reasons that favor this low rate of achievement of EGD in children.

Infants were the most affected population with nearly 2/3 of the sample, unlike other studies carried out in Côte d'Ivoire [3], Nigeria [6], Nepal [8], Togo [9] and Uganda [10] where adolescents were the most numerous. On the one hand, the majority of EGD were performed in a context of poisoning and, on the other hand, most series that deal with accidental poisoning concern infants and small children. According to the authors, once the walking acquired, the child gets autonomy that puts at his disposal many potentially dangerous products which are not correctly stored. And because of the oral stage of psychomotor development or dietary reasons the child does not hesitate to bring to the mouth any discovery, which explains the frequency of intoxication by domestic products, by drugs modern and by food in this age group [11] [12].

The contra-indications, the indications and the conditions of performance of the EGD in the child were developed and codified by several learned societies or American and European scientific researches groups such as European Society for Paediatric Gastroenterology Hepatology and Nutrition (ESPGHAN) and European Society of Gastrointestinal Endoscopy (ESGE), French Society of Digestive Endoscopy (FSDE) and French Group of Hepato Gastroenterology and Parenteral Nutrition (GFHGPN), American Society of Gastrointestinal Endoscopy (ASGE) [1] [13] [14]. All our indications of performance of EGD in these children were recorded in these different works. As in the Nielsen series in infants less than one year old [15], our indications were dominated by vomiting followed by ingestion of caustics, gastrointestinal bleeding, epigastralgia and other forms of abdominal pain. National and international works [2] [3] [6] [8]

[11] [16] [17] showed different results with recurrent abdominal pain (in general or epigastralgia in particular) as the first reason for performing EGD in children. This could be due to the lack of pediatrician gastroenterologist whose existence could change the situation. These vomiting, whether or not associated with hyper-salivation, would be related to the context of increased poisoning with caustics [11] [18]; also signs such as epigastralgia or other abdominal pain could not always be explicit in these concerned infants like in older children or adults.

Caustic poisoning is common in children with a generally favorable course [11] [12]. In addition to deaths due to severe digestive lesions, disabling sequels such as esophageal stenosis may be noted, as it was the case in a 24-month-old infant or gastric perforation responsible for significant mortality [11] [18]. From a compilation of several publications, Mas showed that there is no real correlation between the clinical signs observed and the endoscopic results [18].

Upper gastrointestinal bleeding (UGIB) is an important indication for diagnostic and therapeutic endoscopy requiring rapid pharmacotherapy [19] [20]. These UGIB are rare but serious in children and often require emergency treatment within 24 hours following the start of bleeding. However, this precocious endoscopy for therapeutic purposes remains a controversial subject [21]. Most GIB causes vary according to age and location [22].

Studies in North Africa (Tunisia, Sudan) and West Africa (Côte d'Ivoire, Togo, Nigeria) in children whose age varied for the most part between 1 month and 15 years on average, indicated that the frequency of GIB swung between 9 and 43% [3] [6] [7] [9] [10] [17] [23]. These results show the frequency of upper gastrointestinal bleeding in children. These differences observed are due to sampling fluctuations. Upper digestive endoscopy is the key to the diagnosis of upper digestive hemorrhagic lesions with a high profitability of more than 75% [6] [17]. Due to the insufficiency of adequate technical platform, all of the EGD performed were for diagnostic purposes without any therapeutic gesture in terms of dilation of esophageal stenosis; sclerosis or ligation of esophageal varices, endoscopic obliteration by intravascular injection of an adhesive during or after a hemorrhage by rupture of gastric varices.

EGD result was pathological in a little more than half of the cases. This shows that the diagnostic profitability was acceptable (51.4%) despite the low completion rate of the EGD (1.7%). The lesions involved all stages of the digestive tract with a predominance of gastric and esophageal lesions. Ivorian and African studies had the same findings including a preferential affection of the esophagus and the stomach with a frequency of pathological EGD result ranging between 50 and 60% [3] [16] [17] [23]. Gastropathies were the most common lesions as in many studies [3] [9] [10] and occurred even in infants (3 and 9 months) with no specific history. The caustic lesions observed involved all stages mainly affecting the esophagus and the stomach; they were the prerogative of the direct action of the caustic on the mucous membrane. Ulcers were rare (n = 3) including 2 bulbar (5.8%) and 1 gastric (2.9%) occurring in a 3-month-old infant. This

rarity is observed in other studies [3] [10] [17] [23]. The 3 cases of biliary reflux (8.5%) always associated with gastropathy in a older child and two adolescents could be linked to vomiting efforts during gastroscopy as Assi [17] signified. Esophageal varices were seen at all ages (9-month-old infants, 5-year-olds and 11-year-olds). Their frequency was relatively low (8.6%) as in different series ranging from 0.49% to 5.07% [3] [6] [9] [23]. There is a weak correlation between endoscopic lesions at the esophageal and gastric level and histological findings. The endoscopy showed normal-looking mucosa while histology showed lesions. This was probably due to the lack of systematic biopsy in all cases. This endoscopic evaluation, considered insufficient on many occasions, may be due to the fact that the endoscopy specialist is frequently criticized for having performed biopsies in situations where the general appearance of the mucosa is described as normal [24].

All biopsies in 10 children (28.5%) were sampled from the stomach in suspicious lesions to look for *Helicobacter pylori* (*HP*). Half of these biopsies (14.7%, $n = 5$) showed chronic *HP* gastritis. This proves that *HP* is the first etiological factor of these chronic gastritis as Diomandé [25] and Attia [26] have shown in their respective works with frequencies sometimes varying between 90 and 100%. For the *HP* eradication treatment, we used almost the same triple therapy (AMO protocol) and non-bismuth quadruple therapy (ACMO protocol). These randomized studies have shown for the first time in children that sequential treatment with *HP* is effective in children except for clarithromycin-resistant strains [27] [28].

Blood transfusion was required in 5 patients who had a hemoglobin level of less than 5 g/dl or between 5 and 7 g/dl with signs of intolerance of anemia. These patients had a rupture of esophageal varices (2), an ulcer (2) or gastropathy (1) apart from any poisoning. This confirms the rule that the need for a blood transfusion increases the likelihood of objectifying significant causal injury with endoscopy [29].

In order to prevent bleeding recurrence by rupture of esophageal varices, the medical team opted for the use of non-selective beta-blockers whose efficiency in primary and secondary prevention of portal hypertension hemorrhage was demonstrated by of several studies several studies designed from the synthesis of various publications [30] [31] [32].

5. Conclusions

The EGD is a very useful examination in terms of diagnosis and therapy in the digestive pathology of the child despite its invasive nature. In the current study, the most common findings were gastropathies and concerned much more infants. The main part of the treatment consisted of blood transfusions, administration of beta-blockers and especially the eradication of *HP* from the exhortation to the performance of systematic biopsy in the child.

Moreover, digestive endoscopy is an examination not commonly performed

in children because of several intricate reasons. The establishment of a pediatric gastroenterology service with qualified operators and an adequate technical platform would make it possible to overcome all these weaknesses.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Thomson, M., Tringali, A., Dumonceau, J.-M., Tavares, M., Tabbers, M.M., Furlano, R, *et al.* (2017) Paediatric Gastrointestinal Endoscopy: European Society for Paediatric Gastroenterology Hepatology and Nutrition and European Society of Gastrointestinal Endoscopy Guidelines. *Journal of Pediatric Gastroenterology and Nutrition*, **64**, 133-153. <https://doi.org/10.1097/MPG.0000000000001408>
- [2] Bangoura, A.D., Kissi-Kacou, H.Y.A., Fanou, D.C., Kouamé, D.G., Doffou, S., Assi, C., Mahassadi, A.K., Attia, A.K. and N'dri-Yoman, A.T. (2016) Upper Gastrointestinal Endoscopy in Children's Abdominal Pains in Ivory Coast. *Open Journal of Gastroenterology*, **6**, 397-405. <https://doi.org/10.4236/ojgas.2016.612042>
- [3] Bangoura, A.D., Kissi-Kacou, H.Y.A., Doffou, S., Ssi, C.A., Bathaix, M.F.Y., Attia, A.K., *et al.* (2016) Upper Gastrointestinal Endoscopy and Children Digestive Pathology in Abidjan AC. *Open Journal of Gastroenterology*, **6**, 265-274. <https://doi.org/10.4236/ojgas.2016.610031>
- [4] Heyries, L., Durieux, O., Mirabel, T., Garcon, S., Lambot, K., Aschero, A., *et al.* (2018) Imagerie de la pathologie non tumorale de l'estomac et du duodénum. /data/traites/r4/33-18791. <http://www.em-consulte.com/en/article/23111>
- [5] Barrière, E., Coural, L., Létard, J. and Canard, J. (2018) Endoscopie diagnostique et thérapeutique du tractus digestif supérieur. EM-Consulte. <http://www.em-consulte.com/article/20040/endoscopie-diagnostique-et-therapeutique-du-tractu>
- [6] Alatise, O.I., Anyabolu, H.C., Sowande, O. and Akinola, D. (2015) Paediatric Endoscopy by Adult Gastroenterologists in Ile-Ife, Nigeria: A Viable Option to Increase the Access to Paediatric Endoscopy in Low Resource Countries. *African Journal of Paediatric Surgery*, **12**, 261-265. <https://doi.org/10.4103/0189-6725.172568>
- [7] Mudawi, H.M.Y., El Tahir, M.A., Suleiman, S.H., Eltaybe, N.H., Gamer, N.M., Abdallah, F.A., *et al.* (2009) Paediatric Gastrointestinal Endoscopy: Experience in a Sudanese University Hospital. *Eastern Mediterranean Health Journal*, **15**, 1027-1031. <https://doi.org/10.26719/2009.15.4.1027>
- [8] Joshi, M.R., Sharma, S.K. and Baral, M.R. (2005) Upper GI Endoscopy in Children—In an Adult Suite. *Kathmandu University Medical Journal (KUMJ)*, **3**, 111-114.
- [9] Lawson-Ananissoh, L.M., Bouglouga, O., Bagny, A., Kaaga, L. and Redah, D. (2014) Upper Gastrointestinal Endoscopy in 2795 Patients at the University Campus Hospital of Lomé: Peculiarities According to Sex. *Pan African Medical Journal*, **19**, 262.
- [10] Okello, T.R. (2006) Upper Gastrointestinal Endoscopic Findings in Adolescents at Lacor Hospital, Uganda. *African Health Sciences*, **6**, 39-42.
- [11] Diallo, T., Dénou, A., Coulibaly, B.F., Dakouo, B., Koumaré, B.Y. and Maïga, A. (2016) Epidémiologie des intoxications aiguës chez les enfants de moins de 15 ans au Mali. *Anthropo*, **35**, 103-110.

- [12] Kouéta, F., Dao, L., Yé, D., Fayama, Z. and Sawadogo, A. (2009) Les intoxications aiguës accidentelles de l'enfant: Aspects épidémiologiques, étiologiques et évolutifs au CHU pédiatrique Charles-de-Gaulle de Ouagadougou (Burkina Faso). *Cahiers d'études et de recherches francophones/Santé*, **19**, 55-59.
- [13] Lachaux, A., Michaud, L., Viola, S., Heresbach, D. and Laugier, R. (2009) Consensus en Endoscopie Digestive (CED). *Acta Endoscopica*, **39**, 322-326. <https://doi.org/10.1007/s10190-009-0092-1>
- [14] Lightdale, J.R., Acosta, R., Shergill, A.K., Chandrasekhara, V., Chathadi, K., Early, D., *et al.* (2014) Modifications in Endoscopic Practice for Pediatric Patients. *Gastrointestinal Endoscopy*, **79**, 699-710. <https://doi.org/10.1016/j.gie.2013.08.014>
- [15] Nielsen, R.G., Fenger, C., Pedersen, S.A., Qvist, N., Sørensen, J. and Husby, S. (2001) Diagnostic Benefit of Gastrointestinal Endoscopy in Infants Under One Year of Age—A Two-Year Survey. *Ugeskrift for Læger*, **163**, 1074-1078.
- [16] Assi, C., Tho'o, A.S., Eloumou, G., Lohouès, M.J. and Camara, B.M. (2010) Pediatric Upper Gastrointestinal Endoscopy: Experience in a Hospital Setting in Côte d'Ivoire. *Medecine Tropicale*, **70**, 408-409.
- [17] Boudabbous, M., Gargouri, L., Chtourou, L., Mnif, L., Amouri, A. and Tahri, N. (2014) Indications et apport de la fibroscopie digestive haute chez l'enfant. A propos de 592 cas. *Journal Africain d'Hépatogastroentérologie*, **8**, 125-129. <https://doi.org/10.1007/s12157-014-0531-2>
- [18] Mas, E., Breton, A. and Lachaux, A. (2012) Management of Caustic Esophagitis in Children. *Archives de Pédiatrie*, **19**, 1362-1368. <https://doi.org/10.1016/j.arcped.2012.09.013>
- [19] Lirio, R.A. (2016) Management of Upper Gastrointestinal Bleeding in Children: Variceal and Nonvariceal. *Gastrointestinal Endoscopy Clinics*, **26**, 63-73. <https://doi.org/10.1016/j.giec.2015.09.003>
- [20] Thomson, M. and Belsha, D. (2016) Endoscopic Management of Acute Gastrointestinal Bleeding in Children: Time for a Radical Rethink. *Journal of Pediatric Surgery*, **51**, 206-210. <https://doi.org/10.1016/j.jpedsurg.2015.10.064>
- [21] Exon, D.J. and Sydney Chung, S. (2004) Endoscopic Therapy for Upper Gastrointestinal Bleeding. *Best Practice & Research Clinical Gastroenterology*, **18**, 77-98. [https://doi.org/10.1016/S1521-6918\(03\)00102-1](https://doi.org/10.1016/S1521-6918(03)00102-1)
- [22] Mrad, S.M., Boukthir, S., Brini, I., Hachicha, S. and Samoud, A. (2013) Endoscopic Diagnosis in a Tunisian Pediatric Population with Upper Gastrointestinal Bleeding. *La Tunisie Médicale*, **91**, 655-660.
- [23] Aloulou, H., Maaloul, I., Yaich, S., Kammoun, F., Kammoun, T. and Hachicha, M. (2011) La fibroscopie digestive chez l'enfant: Indications et résultats: Expérience d'un service de pédiatrie générale. *Journal de Pédiatrie et de Puériculture*, **24**, 111-117. <https://doi.org/10.1016/j.jpp.2011.03.006>
- [24] Dahshan, A. and Rabah, R. (2000) Correlation of Endoscopy and Histology in the Gastroesophageal Mucosa in Children: Are Routine Biopsies Justified? *Journal of Clinical Gastroenterology*, **31**, 213-216. <https://doi.org/10.1097/00004836-200010000-00005>
- [25] Diomande, M.I., Fléjou, J.F., Potet, F., Dago-Akribi, A., Ouattara, D., Kadjo, K., *et al.* (1991) Chronic Gastritis and Helicobacter Pylori Infection on the Ivory Coast. A Series of 277 Symptomatic Patients. *Gastroentérologie Clinique et Biologique*, **15**, 711-716.
- [26] Attia, K.A., N'driYoman, T., Mahassadi, A., Bathaix, Y.F., *et al.* (2004) La prévalence de l'infection à H. pylori en milieu scolaire: Résultats de deux écoles pilotes.

Gastroenterologie Clinique et Biologique, **28**, 134.

- [27] Bontems, P., Kalach, N., Oderda, G., Salame, A., Muyshont, L., Miendje, D.Y., *et al.* (2011) Sequential Therapy versus Tailored Triple Therapies for Helicobacter Pylori Infection in Children. *Journal of Pediatric Gastroenterology and Nutrition*, **53**, 646-650.
- [28] Francavilla, R., Lionetti, E., Castellaneta, S.P., Magistà, A.M., Boscarelli, G., Piscitelli, D., *et al.* (2005) Improved Efficacy of 10-Day Sequential Treatment for Helicobacter Pylori Eradication in Children: A Randomized Trial. *Gastroenterology*, **129**, 1414-1419. <https://doi.org/10.1053/j.gastro.2005.09.007>
- [29] Nasher, O., Devadason, D. and Stewart, R.J. (2017) Upper Gastrointestinal Bleeding in Children: A Tertiary United Kingdom Children's Hospital Experience. *Children (Basel)*, **4**, 95. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5704129/>
- [30] Maddur, H., Naik, S., Siddiqui, A.A. and Rockey, D.C. (2011) Adherence and Adequacy of Therapy for Esophageal Varices Prophylaxis. *Digestive Diseases and Sciences*, **56**, 3129-3136. <https://doi.org/10.1007/s10620-011-1749-0>
- [31] Bosch, J. and García-Pagán, J.C. (2003) Prevention of Variceal Rebleeding. *The Lancet*, **361**, 952-954. [https://doi.org/10.1016/S0140-6736\(03\)12778-X](https://doi.org/10.1016/S0140-6736(03)12778-X)
- [32] De Franchis, R. and Baveno, V.I. (2015) Expanding Consensus in Portal Hypertension: Report of the Baveno VI Consensus Workshop: Stratifying Risk and Individualizing Care for Portal Hypertension. *Journal of Hepatology*, **63**, 743-752. <https://doi.org/10.1016/j.jhep.2015.05.022>

RETRACTED