

# Idris Teaching Hospital/Sialkot Medical College Sialkot

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## ABSTRACT

**Objective:** To study the Fate/Outcome of Endoscopy at Idris Teaching Hospital Sialkot Medical College Sialkot

**Study Design:** Experimental and observational study

**Place and Duration of Study:** This study was conducted at the Idris Teaching Hospital Sialkot during Jan 2018 to July 2019.

**Materials and Methods:** This study comprises 1021 patients undergoing endoscopic examination. The demographic data and complications were noted down and lab tests were also advised for example hepatitis A, B and C HIV. Written informed consent was also taken from every patient before the start of the endoscopic examination. The Permission of ethical committee was also considered before collection of data and get publishing in the medical journal. The results were analyzed on SPSS version 10.

**Results:** Mean Age was 45.34 years and SD (standard deviation) was 16.23 years. At the age of 10-20 years, there were 50(10.18%) male and 51(9.62%) female of endoscopy were included in this study. At the age of 21-30 years there were 101(20.57%) male and 85(16.04%) females. At the age of 31-40 years there were 100(20.36%) male and 75(14.15%) female, At the age of 41-50 years there were 101(20.57%) male and 130(24.52%) female, at the age of 51-60 years there were 25(5.09%) male and 75(14.15%) female, At the age of 61-70 years there were 75 (15.27%) male and 85(16.04%) female, at the age 70 years and above there were 35(7.12%) Male and 29(5.47%) female's patients were included in the study. It was observed that female patients of endoscopy were more prevalence than male patients. There were 17(3.46%) Male and 15(2.83%) female patients were found in bleeding during endoscopic examination, the perforation was found in 07 (1.42%) Male and 06(1.13%) Females. The hepatitis A 15(3.05%) Male and 07(1.32%) Female, the hepatitis B 13(2.64%) Male and 03(0.56%) females, the hepatitis C were 18(3.66%) Male and 13(2.45%) female and HIV 02(0.41%) male and 00(00%) female patients.

**Conclusion:** In conclusion, the very elderly cohort received more therapeutic interventions proceeding routine endoscopy as compared to the younger group. Moreover, routine endoscopy in the very elderly carries increased risk of AEs, especially with concomitant use of pethidine hydrochloride sedation

**Key Words:** Hepatitis A, B and C, HIV, Demographic Data.

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## INTRODUCTION

In recent years, Japan's aging population has surged to unprecedented levels. A 2015 census of the very elderly (85 years and older) exceeded 4.9 million (3.9%).<sup>1</sup>

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According to the 2013 World Health Organization Report, life expectancy has increased throughout most parts of the world<sup>2</sup>. The incidence of gastrointestinal disease, particularly gastrointestinal cancers, inevitably increases with age<sup>3,4,5</sup>. Based on a report issued by the US National Cancer Institute, 21.6 and 192.6 patients per 100,000 diagnosed with esophageal and colorectal cancers, respectively, were aged 65 and over<sup>6</sup>. Besides malignant diseases, elderly patients tend to present with benign diseases such as gastrointestinal ulcers<sup>7</sup>. As a result, the number of elderly patients for whom esophagogastroduodenoscopy (EGD) and colonoscopy (CS) are indicated has been increasing in both Japan and western countries<sup>8,9</sup>.

By comparison, the complication rate for endoscopy is reported to be lower in younger patients; however, EGD and CS tend to induce cardiac and respiratory stress in elderly patients<sup>10,11</sup>. To date, cohort study data have been insufficient for assessing the safety and efficacy of endoscopy in the elderly<sup>4,12,13,14,15,16</sup>, particularly studies reporting on the very elderly population (85 years and older)<sup>17,18</sup>. The safety and

efficacy of both EGD and CS remain unconfirmed within the literature. To that end, this study aimed to evaluate the safety and efficacy of EGD and CS in the very elderly in routine clinical practice.

**Material and Methods:** This study comprises 100 patients undergoing endoscopic examination. The demographic data and complications were noted down and lab tests were also advised for example hepatitis A, B and C HIV. Written informed consent was also taken from every patient before the start of the endoscopic examination. The Permission of ethical committee was also considered before collection of data and gets publishing in the medical journal. The results were analyzed on SPSS version 10.

## MATERIALS AND METHODS

This study was conducted at the Idris Teaching Hospital Sialkot during Jan 2018 to July 2019. This study comprises 1021 patients undergoing endoscopic examination. The demographic data and complications were noted down and lab tests were also advised for example hepatitis A, B and C HIV. Written informed consent was also taken from every patient before the start of the endoscopic examination. The Permission of ethical committee was also considered before collection of data and gets publishing in the medical journal. The results were analyzed on SPSS version 10.

## RESULTS

Mean Age was 45.34 years and SD (standard deviation) was 16.23 years. At the age of 10-20 years, there were 50(10.18%) male and 51(9.62%) female of endoscopy were included in this study. At the age of 21-30 years there were 101(20.57%) male and 85(16.04%) females. At the age of 31-40 years there were 100(20.36%) male and 75(14.15%) female. At the age of 41-50 years there were 101(20.57%) male and 130(24.52%) female, at the age of 51-60 years there were 25(5.09%) Male and 75(14.15%) female. At the age of 61-70 years there were 75 (15.27%) male and 85(16.04%) female, at the age 70 years and above there were 35(7.12%) Male and 29(5.47%) female's patients were included in the study. It was observed that female patients of endoscopy were more prevalence than male patients as shown in table 1.

**Table No.1: Age and Gender Distribution In endoscopic Examination Patients**

Sr. No.	Age	Male	Female
1	10-20	50(10.18%)	51(9.62%)
2	21-30	101(20.57%)	85(16.04%)
3	31-40	100(20.36%)	75(14.15%)
4	41-50	101(20.57%)	130(24.52%)
5	51-60	25(5.09%)	75(14.15%)
6	61-70	75(15.27%)	85(16.04%)
7	70 and above	35(7.12%)	29(5.47%)
Total		491(100%)	530

**Table No.2: Pre-endoscopic medications**

	Very elderly	Younger group	P value
Esophagogastro-duodenoscopy, n (%)	185 (100%)	609 (100%)	
• Glucagon, n (%)	102 (55.1%)	52 (8.5%)	<0.01
• Flunitrazepam, n (%)	106 (57.3%)	456 (74.9%)	<0.01
• Pethidine hydrochloride, n (%)	3 (1.6%)	17 (2.7%)	0.37
• Midazolam, n (%)	7 (3.8%)	132 (21.7%)	<0.01
Colonoscopy, n (%)	70 (100%)	262 (100%)	
• Glucagon, n (%)	52 (74.3%)	19 (7.3%)	<0.01
• Flunitrazepam, n (%)	2 (2.9%)	37 (14.1%)	<0.01
• Pethidine hydrochloride, n (%)	48 (68.6%)	241 (92.0%)	<0.01
• Midazolam, n (%)	1 (0.5%)	6 (2.3%)	0.66

**Table No.3: Characteristics of the study groups**

	Very elderly	Younger group	P value
Number of patients (n)	255	871	
Male/female (n/n)	491/530	491/530	<0.01
Mean age (min-max)	Mean Age was 45.34 years and SD (standard deviation) was 16.23 years 21-70 and above	40.5 (17-49)	<0.01
Initial procedure, n (%)	21 (8.2%)	229 (26.3%)	<0.01
EGD/CS (n/n)	185/70	609/262	0.42
Outpatient/inpatient (n/n)	190/65	778/93	<0.01
<b>Comorbidity</b>			
• Respiratory disease, n (%)	46 (18.0%)	65 (7.5%)	<0.01
• Hypertension, n (%)	168 (65.9%)	77 (8.8%)	<0.01
• Cardiovascular disease, n (%)	104 (40.8%)	45 (5.2%)	<0.01
• Cerebrovascular disease, n (%)	32 (12.5%)	5 (0.6%)	<0.01
• Malignancy (Post-therapy inclusion), n (%)	118 (46.3%)	153 (17.6%)	<0.01
• Diabetes mellitus, n (%)	43 (16.9%)	34 (3.9%)	<0.01
• Abdominal surgical history, n (%)	76 (29.8%)	126 (14.4%)	<0.01
<b>Medications</b>			
• Antihypertensive drug, n (%)	163 (63.9%)	64 (7.3%)	<0.01
• Antithrombotic drug, n (%)	109 (42.7%)	30 (3.4%)	<0.01
• Hypoglycemic drug, n (%)	27 (10.6%)	30 (3.4%)	<0.01
• Tranquilizer, n (%)	30 (11.8%)	86 (9.9%)	0.38

**TableNo.4: Therapeutic interventions post-routine endoscopy**

	Very elderly	Younger group	P value
Total number of patients, n (%)	43 (16.9%)	60 (6.9%)	<0.01
Drug administration, n (%)	14 (5.5%)	15 (1.7%)	
EVL and/or EIS, n (%)	1 (0.4%)	5 (0.6%)	
APC, n (%)	3 (1.2%)	0 (0%)	
EMR, n (%)	16 (6.3%)	32 (3.7%)	
ESD, n (%)	4 (1.5%)	2 (0.2%)	
Open surgery, n (%)	2 (0.8%)	4 (0.8%)	
Chemo and/or radiation therapy, n (%)	2 (0.8%)	0 (0%)	
Others	2 (0.8%)	2 (0.2%)	

**Table No.5: Fate/outcome In Patients Undergoing Endoscopic Examination**

Ser. No	Complications	Male	Female
1	Bleeding	17(3.46%)	15(2.83%)
2	Perforation	07(1.42%)	06(1.13%)
3	Hepatitis A	15(3.05%)	07(1.32%)
4	Hepatitis B	13(2.64%)	03(0.56%)
5	Hepatitis C	18(3.66%)	13(2.45%)
6	HIV	02(0.41%)	00(00%)

There were 17(3.46%) Male and 15(2.83%) female patients were found in bleeding during endoscopic examination, the perforation was found in 07 (1.42%) Male and 06(1.13%) Females. The hepatitis A 15(3.05%) Male and 07(1.32%) Female the hepatitis B 13(2.64%) Male and 03(0.56%) females, the hepatitis C were 18(3.66%) Male and 13(2.45%) female and HIV 02(0.41%) male and 00(00%) female patients as shown in table 3.

## DISCUSSION

We evaluated safety and efficacy of endoscopy in a routine clinical setting targeting the upper bracket of the elderly population. In the current cohort, very elderly Pakistani patients had multiple comorbidities and received numerous medications. By comparison, an American population-based study reported that severe AEs (colonic perforations and gastrointestinal bleeding) with outpatient colonoscopy were associated with chronic and multiple comorbidities in the elderly<sup>3</sup>. However, in our multivariate analysis, even though comorbidity was not an independent predictive factor for AEs, cardiovascular disease showed a trend toward risk complications (P=0.15).

In the current study, the rate of AEs in the very elderly was 6.3%, greater than that in the younger group, observed at 1.1%. In another study, Clarke et al.<sup>17</sup> conducted a single-arm observational study of 214 consecutive participants who underwent endoscopic procedures including EGD, CS and endoscopic

retrograde cholangiopancreatography (ERCP), including patients aged above 70 years. Ten percent of the time, the procedures were performed by emergency care as a result of upper gastrointestinal hemorrhage. In contrast, we recruited the elective cohort without therapeutic procedures or emergency care in routine - clinical practice. The authors of the aforementioned study also reported no procedure-related mortality, rates of colonic perforation and of cardiopulmonary complications in sedated patients were 1.42% and 2.83% respectively. They concluded that gastrointestinal endoscopy in the very elderly is an extremely safe procedure. Comparatively, our results show no procedure-related mortality, non-existent perforation, and a slightly higher rate of cardiopulmonary complications (hypoxemia, 3.5%; hypotension, 0.8%). These differences arose from the observed cohort and how AEs were defined. Furthermore, three separate studies<sup>4, 15, 18</sup> have confirmed the safety of colonoscopy in elderly populations. Day et al.<sup>19</sup> conducted a meta-analysis reporting that elderly patients, particularly octogenarians, appear to have a higher risk of complications both during and after colonoscopy. Our results suggest that the very elderly incurs some complications in routine endoscopy, especially hypoxemia; however, procedure-related mortality was not observed in this study.

We subsequently calculated independent variables potentially influencing AEs in routine endoscopy using logistic multivariate analysis. These variables included age  $\geq 70$  years, inpatient status, and administration of pethidine hydrochloride as risk factors for AE associated with routine endoscopy. Results of our multivariate analysis indicate that in the very elderly, routine endoscopy carries various risk factors. In patients undergoing endoscopic examination may have more unmeasured risk factors than outpatients. In particular, administration of pethidine hydrochloride was the most influential parameter in this study (OR 3.44, 95%CI 1.51–7.81, P<0.01). In general, benzodiazepines and opioids are typically utilized for sedation in gastrointestinal endoscopy<sup>20</sup>; however, for this study, flunitrazepam and/or pethidine hydrochloride were administered as a means of sedation. Benzodiazepines and particularly opioids<sup>20</sup> reportedly carry risks of respiratory and hemodynamic depression<sup>20, 21</sup>. Based on these results, we propose a dosage reduction for pethidine hydrochloride when administered to very elderly patients. Alternatively, unseated endoscopy has been suggested as an option to avoid complications in this cohort<sup>22</sup>.

Some previous reports<sup>15, 17</sup> have highlighted the high diagnostic yield of endoscopy in the elderly. Our results indicate that the very elderly receive therapeutic interventions subsequent to routine endoscopy. This suggests that endoscopy appears to be an effective surveillance modality in the elderly population. However, it remains inconclusive whether endoscopy

improves prognosis in this population. Large-scale observational studies to evaluate the efficacy of endoscopy and prognosis in the very elderly will help to elucidate this unanswered question.

## CONCLUSION

In conclusion, the very elderly cohort received more therapeutic interventions proceeding routine endoscopy as compared to the younger group. Moreover, routine endoscopy in the very elderly carries increased risk of AEs, especially with concomitant use of pethidine hydrochloride sedation.

### Author's Contribution:

Concept & Design of Study: Brig Shahid Raza  
 Drafting: Asif Javed, Manzoor Hussain Bajwa  
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**Conflict of Interest:** The study has no conflict of interest to declare by any author.

## REFERENCES

1. Statistics Bureau, Ministry of Internal Affairs and Communications. Japan Statistical Yearbook 2017
2. World Health Organization. World Health Report 2013.
3. Chukmaitov A, Siangphoe U, Dahman B, et al. Patient Comorbidity and Serious Adverse Events after Outpatient Colonoscopy: Population-based Study From Three States, 2006 to 2009. *Dis Colon Rectum* 2016;59:677–687.
4. Karajeh M A, Sanders D S, Hurlstone D P. Colonoscopy in elderly people is a safe procedure with a high diagnostic yield: a prospective comparative study of 2,000 patients. *Endoscopy* 2006;38:226–230.
5. Arora A, Singh P. Colonoscopy in patients 80 years of age and older is safe, with high success rate and diagnostic yield. *Gastrointest Endosc* 2004;60:408–413.
6. Howlader N, Noone AM, Krapcho M. SEER Cancer Statistics Review(CSR) 1975-2014; National Cancer Institute
7. Buri L, Zullo A, Hassan C, et al. Upper gastrointestinal endoscopy in elderly patients: predictive factors of relevant endoscopic findings. *J Emerg Med* 2013;8:141–146.
8. Horiuchi A, Nakayama Y, Tanaka N, et al. Propofol sedation for endoscopic procedures in patients 90 years of age and older. *Digestion*. 2008;78:20–23.
9. Qureshi W A, Zuckerman M J, Adler D G et al. ASGE guideline: modifications in endoscopic practice for the elderly. *Gastrointest Endosc* 2006;63:566–569.
10. Zafar H M, Harhay M O, Yang J, et al. Adverse events following computed tomographic colonography compared to optical colonoscopy in the elderly. *Prev Med Rep* 2014;1:3–8
11. Adachi W, Yazawa K, Owa M, et al. Quantification of cardiac stress during EGD without sedation. *Gastrointest Endosc* 2002;55:58–64
12. Benson M E, Byrne S, Brust D J, et al. EUS and ERCP complication rates are not increased in elderly patients. *Dig Dis Sci* 2010;55:3278–3283
13. Lukens FJ, Loeb DS, Machicao VI, et al. Colonoscopy in octogenarians: a prospective outpatient study. *Am J Gastroenterol* 2002; 97:1722–1725
14. Lee T C, Huang S P, Yang J Y, et al. Age is not a discriminating factor for outcomes of therapeutic upper gastrointestinal endoscopy. *Hepato-gastroenterology* 2007;54:1319–1322
15. Arora G, Mannalithara A, Singh G, et al. Risk of perforation from a colonoscopy in adults: a large population-based study. *Gastrointest Endosc* 2009; 69:654–664.
16. Ma WT, Mahadeva S, Kunanayagam S, et al. Colonoscopy in elderly Asians: a prospective evaluation in routine clinical practice. *J Dig Dis* 2007;8:77–81.
17. Clarke G A, Jacobson B C, Hammett R J, et al. The indications, utilization and safety of gastrointestinal endoscopy in an extremely elderly patient cohort. *Endoscopy* 2001;33:580–584
18. Schmilovitz-Weiss H, Weiss A, Boaz M, et al. Predictors of failed colonoscopy in nonagenarians: a single-center experience. *J Clin Gastroenterol* 2007;41:388–393.
19. Day LW Kwon A, Inadomi JM, et al. Adverse events in older patients undergoing colonoscopy: a systematic review and meta-analysis. *Gastrointest Endosc* 2011;74:885–896
20. Moon S H. Sedation regimens for gastrointestinal endoscopy. *Clin Endosc* 2014;47:135–140.
21. Manolaraki M M, Theodoropoulou A, Stroumpos C, et al. Remifentanyl compared with midazolam and pethidine sedation during colonoscopy: a prospective, randomized study. *Dig Dis Sci* 2008;53:34–40.
22. Abraham NS, Fallone CA, Mayrand S, et al. Sedation versus no sedation in the performance of diagnostic upper gastrointestinal endoscopy: a Canadian randomized controlled cost-outcome study. *Am J Gastroenterol* 2004;99:1692–1699.