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# Histopathological Features of Colorectal Polyps and Tumors at Sumber Waras Hospital from 2015-2023

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<p>Accepted: 19 July 2024 Revised: 10 July 2024 Published: 17 August 2024</p> <p><b>How to cite :</b> Jovial, &amp; Sugiharto, S. (2024). Histopathological Features of Colorectal Polyps and Tumors at Sumber Waras Hospital from 2015-2023. Contagion : Scientific Periodical of Public Health and Coastal Health, 6(2), 878–891.</p>	<p><i>Colorectal tumours pose a significant global health issue, including in Indonesia. The development of colorectal polyps and tumours involves various risk factors such as poor lifestyle choices, male gender, and advancing age. This study aims to determine the characteristics of patients with colorectal polyps and tumours, their histopathological features, and the most common gender and age group for each histopathological feature. The study was conducted at Sumber Waras Hospital, implementing a descriptive cross-sectional approach with retrospective data of 113 patients with colorectal polyps and tumours from 2015-2023. This study's findings indicate that most patients were males (58.4%), with the highest number in the 61-70 age group (29.2%). Among non-neoplastic lesions, inflammatory polyp was the most prevalent histopathological finding (18.3%), whereas adenocarcinoma (NOS) was the most common feature among all neoplastic lesions (53.3%). All non-neoplastic lesions were predominantly found in males. Neoplastic lesions such as adenocarcinoma (NOS), mucinous adenocarcinoma, neuroendocrine tumours, and lymphoma were also more prevalent in males. In contrast, adenoma, signet ring, and squamous cell carcinoma were more frequently found in females. Non-neoplastic lesions such as hamartoma were most common in the 11-20 age group, while hyperplastic and inflammatory polyps were prevalent in the 61-70 age group. Neoplastic lesions such as adenoma were most prevalent in the 61-70 and 71-80 age groups; mucinous adenocarcinoma and lymphoma in the 51-60 age group; adenocarcinoma (NOS), squamous cell carcinoma, and neuroendocrine tumours in the 61-70 age group; as well as signet ring cell carcinoma in the 71-80 age group. To reduce the prevalence of colorectal polyps and tumours, it may be crucial to consider performing histopathological examinations for a thorough evaluation, given their wide variety that requires different diagnostic and treatment strategies.</i></p> <p><b>Keywords:</b> Age Group, Colorectal Polyp, Colorectal Tumor, Gender, Histopathological Features</p>

## INTRODUCTION

Large intestine tumours, more commonly known as colorectal tumours, continue to pose an increasingly significant global health challenge, including in Indonesia. The development of colorectal polyps and tumours involves modifiable risk factors such as low-fibre diet, high-fat intake, alcohol consumption, smoking, physical inactivity, and obesity, as well as non-modifiable factors such as family history of colorectal polyps, colorectal cancer, and intestinal polyposis disorders, male gender, and advancing age (Meseeha & Attia, 2023; Sanjaya & Lestarini, 2023).

Moreover, recent research has emphasized that genetic mutations and epigenetic alterations may also be contributing factors, especially with increasing age (Millan et al., 2015).

Based on a previous study conducted by Jayadevan et al. (2016), most benign cases included adenomas, hyperplastic polyps, inflammatory polyps, and hamartomatous polyps.

Out of 172 collected samples, 72 (41.9%) were adenomas, 85 (49.4%) were hyperplastic polyps, and the remaining 15 (8.7%) were inflammatory polyps and hamartomatous polyps (Jayadevan, S, Sabu, & Venugopalan, 2016). However, some polyp types, particularly adenomas, are considered precursors of colorectal cancer, such as adenocarcinoma, which accounts for >90% of all colorectal carcinomas (Cekodhima & Sulo, 2016).

These adenocarcinomas often arise from advanced adenomas that undergo enlargement and severe dysplasia (Han et al., 2020). Adenocarcinoma is further classified into histological subtypes such as mucinous adenocarcinoma, signet ring cell carcinoma, and medullary carcinoma (Alzahrani & Al-Ghafar, 2021).

Other types of colorectal carcinomas—although rare—include squamous cell carcinoma (<1%), adenosquamous carcinoma, spindle cell carcinoma, and undifferentiated carcinoma (Menon & Cagir, 2023). Aside from adenocarcinoma, neuroendocrine tumours, lymphomas, leiomyosarcomas, and gastrointestinal stromal tumours are rare malignant tumours that can also occur in the colon and rectum (Ottaiano et al., 2022; Yoon et al., 2024).

As for the recent update, colorectal cancer affected 18.4% of the worldwide population in 2022 alone (World Cancer Research Fund International, 2022). Based on the information provided by the Global Cancer Observatory (2020), colorectal cancer also ranked as the fourth most common cancer in Indonesia, reaching an estimated 34,189 cases (8.6%) out of a total of 396,914 cases (Global Cancer Observatory, 2020).

Therefore, the detection of colorectal polyps or tumours through colonoscopy, followed by biopsy or resection surgery, and subsequent histopathological examination remains the gold standard for aiding in diagnosis and determining appropriate management (Meseeha & Attia, 2023; Zhou et al., 2017). This study aims to explore the variety of histopathological features, given the need for more research on the histopathological features of colorectal polyps and tumours at Sumber Waras Hospital.

## METHODS

This study implemented a descriptive cross-sectional design and was conducted at the Anatomical Pathology Laboratory of Sumber Waras Hospital, West Jakarta, between December 2023 and January 2024. The sample obtained for this study consisted of

retrospective data from anatomical pathology forms of patients with colorectal polyps and tumours throughout 2015-2023. The sampling method was non-random sampling, resulting in 113 patients with colorectal polyps and tumours.

The sample selection utilized in this study encompassed patients who met the following inclusion criteria: Patients with colorectal polyps or tumours who have undergone biopsy or resection surgery and had their histopathological findings examined at the Anatomical Pathology Laboratory of Sumber Waras Hospital.

Microsoft Excel was used to input the age and sex of the patients, as well as the clinical diagnosis and histopathological results. The colorectal polyps and tumours were classified into non-neoplastic (hyperplastic, inflammatory, and hamartomatous polyps) and neoplastic (adenoma, adenocarcinoma (NOS), mucinous adenocarcinoma, signet ring cell carcinoma, squamous cell carcinoma, neuroendocrine tumour, and lymphoma) lesions based on their histopathological results.

The collected data was then analyzed using SPSS software version 27, which involved univariate analysis utilizing descriptive and frequency statistics (N and %). Additionally, this research was approved by the Research Ethics Committee of Sumber Waras Hospital (No: 03/RSSW/KoM.EP/EC/I/2024).

## RESULTS

**Table 1. Characteristics of Patients**

Characteristic	n	%
<b>Sex</b>		
Male	66	58.4%
Female	47	41.6%
<b>Age (years)</b>		
11-20	1	0.9%
21-30	5	4.4%
31-40	6	5.3%
41-50	15	13.3%
51-60	24	21.2%
61-70	33	29.2%
71-80	23	20.4%
>80	6	5.3%

According to Table 1, the characteristics of the patients with colorectal polyps and tumours at Sumber Waras Hospital reveal that there is a higher prevalence of colorectal polyps and tumours in males, which accounts for 66 patients (58.4%) compared to 47 patients (41.6%)

in females. The age group of 61-70 years has the highest prevalence, with 33 patients (29.2%), whereas the age group of 11-20 years has the lowest, with only one patient (0.9%).

**Table 2. Types of Histopathological Features in Colorectal Polyps and Tumors**

Histopathological Feature	n	%
<b>Non-neoplastic</b>		
Hyperplastic polyp	1	0.8%
Inflammatory polyp	22	18.3%
Hamartomatous polyp	1	0.8%
<b>Neoplastic</b>		
Adenoma	11	9.2%
Adenocarcinoma (NOS)	64	53.3%
Mucinous adenocarcinoma	15	12.5%
Signet ring cell carcinoma	3	2.5%
Squamous cell carcinoma	1	0.8%
Neuroendocrine tumor	1	0.8%
Lymphoma	1	0.8%

\*Each patient may have multiple histopathological features

According to Table 2, 10 types of histopathological features were found in 113 patients; however, seven patients had more than one histopathological feature. Among non-neoplastic lesions, inflammatory polyps are the most common histopathological finding, accounting for 22 patients (18.3%). Adenocarcinoma is the most frequently found among all neoplastic lesions, with 64 patients (53.3%).

**Table 3. Histopathological Features Distribution According to Patients' Sex**

Histopathological Feature	Sex	
	Female n (%)	Male n (%)
<b>Non-neoplastic</b>		
Hyperplastic polyp	0 (0)	1 (100)
Inflammatory polyp	10 (45.5)	12 (54.5)
Hamartomatous polyp	0 (0)	1 (100)
<b>Neoplastic</b>		
Adenoma	6 (54.5)	5 (45.5)
Adenocarcinoma (NOS)	24 (37.5)	40 (62.5)
Mucinous adenocarcinoma	7 (46.7)	8 (53.3)
Signet ring cell carcinoma	2 (66.7)	1 (33.3)
Squamous cell carcinoma	1 (100)	0 (0)
Neuroendocrine tumor	0 (0)	1 (100)
Lymphoma	0 (0)	1 (100)

\*Each patient may have multiple histopathological features

According to Table 3, all types of histopathological features from non-neoplastic lesions, such as hyperplastic, inflammatory, and hamartomatous polyps, are predominantly found in males. Neoplastic lesions such as adenocarcinoma (NOS), mucinous adenocarcinoma,

neuroendocrine tumour, and lymphoma are more common in males. In contrast, adenoma, signet ring, and squamous cell carcinoma are more frequently found in females.

**Table 4. Histopathological Features Distribution According to Patients' Age (n=120)**

Histopathological Feature	Age Group							
	11-20 n (%)	21-30 n (%)	31-40 n (%)	41-50 n (%)	51-60 n (%)	61-70 n (%)	71-80 n (%)	>80 n (%)
Hyperplastic polyp	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)
Inflammatory polyp	0 (0)	2 (9.1)	1 (4.5)	2 (9.1)	1 (4.5)	10(45.5)	4 (18.2)	2 (9.1)
Hamartomatous polyp	1 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Adenoma	0 (0)	1 (9.1)	1 (9.1)	1 (9.1)	1 (9.1)	3 (27.3)	3 (27.3)	1 (9.1)
Adenocarcinoma (NOS)	0 (0)	1 (1.6)	1 (1.6)	10(15.6)	17(26.6)	19(29.7)	13(20.3)	3 (4.7)
Mucinous adenocarcinoma	0 (0)	0 (0)	3 (20)	3 (20)	4 (26.7)	2 (13.3)	3 (20)	0 (0)
Signet ring cell carcinoma	0 (0)	1 (33.3)	0 (0)	0 (0)	0 (0)	0 (0)	2 (66.7)	0 (0)
Squamous cell carcinoma	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)
Neuroendocrine tumor	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)
Lymphoma	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)

According to Table 4, non-neoplastic lesions such as hyperplastic and inflammatory polyps are most commonly found in the 61-70 age group, while hamartomatous polyps are most prevalent in the 11-20 age group. Among neoplastic lesions, adenoma is most common in the 61-70 and 71-80 age groups with the same amount of patients. Adenocarcinoma (NOS) is most prevalent in the 61-70 age group; mucinous adenocarcinoma is more frequently found in the 51-60 age group, and signet ring cell carcinoma in the 71-80 age group. Both squamous cell carcinoma and neuroendocrine tumours are most frequently found in the 61-70 age group, while lymphoma is most prevalent in the 51-60 age group.

## DISCUSSION

### Sex and Age Group Characteristics in Patients with Colorectal Polyps and Tumors

Based on the data obtained from this research, the prevalence of patients with colorectal polyps and tumours at Sumber Waras Hospital is highest among males, with 66 individuals (58.4%). This finding is consistent with a study conducted by Zhou et al. (2017) at Central Hospital of Wuhan, which involved 297 patients with colorectal polyps and found a higher prevalence in males, accounting for 149 individuals (50.2%) (Zhou et al., 2017).

Similarly, a previous study by Gunasekaran et al. (2019) at RSUP Sanglah from 2013-2017, which included 121 patients with colorectal carcinoma, showed a higher prevalence in



males, with 72 individuals (59.5%) (Gunasekaran, Ekawati, & Sumadi, 2019). Another study by Putri et al. (2021) at Government General Hospital (RSUP) Sanglah in 2018, involving 115 patients with colorectal malignancies, also found a higher prevalence in males, with 69 individuals (60%) (Putri, Ekawati, & Saputra, 2021).

Additionally, a study conducted by Sanjaya et al. (2023) at Regional Public Hospital (RSUD) Sanjiwani Gianyar from 2019-2020 involving 76 patients with colorectal cancer revealed a higher prevalence in males, with 40 individuals (52.6%) (Sanjaya & Lestarini, 2023). The male gender is considered an unmodifiable risk factor in developing colorectal polyps and tumours. The precise causes for the gender differences in risk factors are still unclear but are likely related to lifestyle and poor dietary habits (Meseeha & Attia, 2023; Sanjaya & Lestarini, 2023).

Vari et al. (2016) reported that females, compared to males, tend to consume more fruits and vegetables and are more predisposed towards maintaining a healthy diet, which often involves consuming lower energy-dense foods (Vari et al., 2016). Furthermore, Lin et al. (2013) also indicated that there is a correlation between the incidence of colorectal cancer in males and levels of testosterone, estradiol, estrone, and sex hormone-binding globulin (SHBG), where higher levels of testosterone and SHBG reduce the risk of colorectal cancer, while estradiol and estrone are not associated with colorectal cancer risk. However, a higher estradiol-to-testosterone ratio can increase the risk of colorectal cancer because increased estradiol production provides negative feedback that inhibits the secretion of luteinizing hormone (LH), thereby reducing testosterone secretion (Lin et al., 2013).

The prevalence of patients with colorectal polyps and tumours at Sumber Waras Hospital is highest in the 61-70 age group, with 33 individuals (29.2%). This finding aligns with research conducted by Sanjaya et al. (2023) at RSUD Sanjiwani Gianyar from 2019-2020, which found that among 76 patients with colorectal cancer, those aged  $\geq 50$  years had a higher prevalence, with 55 individuals (72.4%) (Sanjaya & Lestarini, 2023). Similarly, a previous study at RSUP Sanglah, involving 115 patients with colorectal malignancies, reported that the 56-65 age group had the highest prevalence (Putri et al., 2021).

Moreover, Zhou et al. (2017) conducted another study at the Central Hospital of Wuhan, which included 297 patients with colorectal polyps, and also found that the 65-69 age group had the highest prevalence (Zhou et al., 2017). Genetic mutations and epigenetic alterations may contribute to advancing age, especially with KRAS and BRAF mutations being

more common with increasing age and TP53 mutations being more common in older patients (Millan et al., 2015).

### **Histopathological Features of Colorectal Polyps and Tumors**

Based on this study, inflammatory polyps represent the most common histopathological feature among non-neoplastic lesions, accounting for 22 individuals (18.3%). This finding correlates with research conducted by Zhou et al. (2017) at the Central Hospital of Wuhan from 2013-2014, in which inflammatory polyps were predominant, accounting for 227 out of 267 patients with non-neoplastic polyps (Zhou et al., 2017).

Among neoplastic lesions, adenocarcinoma (NOS) constitutes the most prevalent histopathological feature, with 64 individuals (53.3%) in this study. This finding is consistent with previous research by Gunasekaran et al. (2019) at RSUP Sanglah from 2013-2017, which discovered that adenocarcinoma (NOS) was the most common histopathological feature, accounting for 118 out of 121 patients with colorectal carcinoma (Gunasekaran et al., 2019).

Additionally, a study conducted by Putri et al. (2021) at RSUP Sanglah found that adenocarcinoma (NOS) was the most prevalent histopathological feature, with 103 individuals (89.6%) (Putri et al., 2021). Husnah et al. (2024) in Rumah Sakit Pendidikan Ibnu Sina also reported that adenocarcinoma was most frequently found, accounting for 53 individuals (96,4%) (Husnah, Yanti, Arifin, Hasbi, & Ikram, 2024).

Numerous literature reviews indicate that most colorectal cancers are adenocarcinomas, comprising over 90% of all colorectal malignancies (Alzahrani et al., 2021; Menon et al., 2023). These malignant tumours originate from adenomas, which are initially benign and undergo malignant transformation over time, such as increased size and severe dysplasia. These adenomas that underwent malignant transformation are defined as advanced adenomas with the following criteria: size  $\geq 10$  mm, villous component  $>25\%$ , or severe dysplasia (Han et al., 2020).

### **Histopathological Features of Colorectal Polyps and Tumors Based on Sex**

Based on the distribution of histopathological features by sex, hyperplastic polyps are found in males, with only 1 case in this study. This finding is consistent with a study conducted by Kim et al. (2014), which examined 4,187 cases of hyperplastic polyps following colonoscopy. The study reported that the prevalence of hyperplastic polyps was highest in males, with 3,097 patients (74%) (Kim et al., 2014).

Similarly, hamartomatous polyps are predominantly observed in males, with only 1 case in this study. Roth et al. (1963) found that among 158 patients with juvenile polyps, 117 (74%) were males, including 62 younger boys (53%) (Roth & Helwig, 1963). Additionally, inflammatory polyps are more frequently found in males, accounting for 12 individuals (54.5%) in this study. Inflammatory polyps typically occur in patients with inflammatory bowel disease, which is more common in those with ulcerative colitis than Crohn's disease (Ashktorab et al., 2020).

Rustgi et al. (2020) indicated that the incidence of ulcerative colitis is generally similar between males and females before the age of 45. However, the incidence increases in males compared to females after the age of 45 (Rustgi, Kayal, & Shah, 2020). Adenomas are predominantly found in females, comprising six individuals (54.5%) in this study. However, this finding differs from research conducted by Kim et al. (2014) towards 7,775 cases of adenomas following colonoscopy evaluation, with the prevalence of adenomas being highest in males, accounting for 5,511 individuals (70.9%) (Kim et al., 2014).

Recent studies have also suggested that males are more predisposed to developing adenomas and advanced adenomas, but they can still occur in women as the risk increases with age (Zhou et al., 2017). This study found adenocarcinoma (NOS) most commonly found in males, with 40 individuals (62.5%). This finding is consistent with a study conducted by Stewart et al. (2006), involving 522,630 microscopically confirmed cases of colorectal cancer, in which the prevalence of patients with adenocarcinoma (NOS) was highest in males, accounting for 189,382 individuals (Stewart, Wike, Kato, Lewis, & Michaud, 2006).

Mucinous adenocarcinoma is most frequently found in males, with eight individuals (53.3%) in this study. In contrast, a study conducted by Stewart et al. (2006) on 522,630 cases of colorectal cancer showed that the prevalence of mucinous adenocarcinoma was highest in females, with 8,649 individuals (53.7%) (Stewart et al., 2006). This previous study is also consistent with research conducted by Benesch et al. (2020), which found that the prevalence of mucinous adenocarcinoma in the colon was also highest in females, with 21,699 individuals (53.9%).

However, when comparing mucinous adenocarcinoma in the rectum, it was found most frequently in males, with 5,202 individuals (58.8%) (Benesch & Mathieson, 2020a). Signet ring cell carcinoma is most prevalently seen in females, with two individuals (66.7%) in this study. This finding is consistent with the survey conducted by Benesch et al. (2020), which reported that the prevalence of signet ring cell carcinoma in the colon was highest in females,

with 2,310 individuals (50.4%), while signet ring cell carcinoma in the rectum was most commonly found in males, with 845 individuals (65.3%) (Benesch & Mathieson, 2020b).

According to this study, squamous cell carcinoma is found in females, with only 1 case. This finding aligns with the research conducted by Yang *et al.* (2022), in which the prevalence of colorectal squamous cell carcinoma was highest in females, accounting for 644 individuals (67.9%) (Yang et al., 2022). Neuroendocrine tumours are found in males, with only 1 case in this study.

However, this data contrasts with the findings of Schmuck et al. (2020), who reported that females had a higher prevalence of neuroendocrine tumours compared to males (Schmuck et al., 2020). Lastly, lymphoma is found in males, with only 1 case in this study. A study conducted by Yachida et al. (2022) supports this finding, which found that males were more frequently affected, accounting for 58 individuals (64%) in cases of colorectal lymphomas (Yachida et al., 2022).

### **Histopathological Features of Colorectal Polyps and Tumors Based on Age Groups**

Based on the distribution of histopathological features by age group, hamartomatous polyp is found in the 11-20 age group. This finding aligns with the study conducted by Roth et al. (1963), which found that among 158 patients with juvenile polyps, 99 patients (62.7%) were children aged between 11 months and ten years, with an average age of 4.1 years (Roth & Helwig, 1963). Hamartomatous polyps are more commonly seen in children and adolescents, with a prevalence of approximately 2% in the pediatric population (Gao et al., 2020; Jelsig et al., 2014). These polyps are typically identified in children aged 2-6 but can also occur in individuals older than 10 (Benzamin, Das, Nahid, & Rukunuzzaman, 2020).

This study found Hyperplastic polyps in the 61-70 age group. However, this finding differs from a previous study by Kim et al. (2014), which examined 4,187 patients with hyperplastic polyps following colonoscopy evaluation and found that the highest prevalence was in the 50-59 age group, with 1,494 individuals (35.7%) (Kim et al., 2014). Inflammatory polyps are most frequently found in the 61-70 age group, with ten individuals (45.5%) in this study. Inflammatory polyps typically occur in patients with inflammatory bowel disease (IBD), which has the highest incidence in individuals over 60 years old (Keyashian et al., 2019).

Multiple research also indicated that the frequency of inflammatory polyps is higher in patients with IBD compared to those with other forms of colitis (Ashktorab et al., 2020). In this study, adenomas are most commonly found in the 61-70 and 71-80 age groups, with an equal number of cases, three individuals (27.3%) each. This finding is consistent with a previous

study conducted by Zhou et al. (2017), which found that the prevalence of adenomas was highest among the age group of 65-74 years. Furthermore, a higher prevalence of adenomas was found in patients aged 60 years and above (Jayadevan et al., 2016).

Adenocarcinoma (NOS) is most frequently found in the 61-70 age group, accounting for 19 individuals (29.7%) in this study. This finding aligns with research conducted by Putri et al. (2021) at RSUP Sanglah, which found that the 56-65 age group had the highest prevalence, with adenocarcinoma (NOS) being the most common histopathological feature (Putri et al., 2021). According to Zhou et al. (2017), advancing age ( $\geq 65$  years) is an independent risk factor for the development of colorectal adenomas, thereby increasing the risk of adenocarcinoma (Zhou et al., 2017).

Furthermore, adenocarcinoma is linked to ageing due to genetic mutations and epigenetic alterations that arise with advancing age. Commonly associated genetic mutations include those identified in APC (Adenomatous Polyposis Coli), TP53 (Tumor Protein p53), KRAS (Kirsten Rat Sarcoma), PIK3CA (Phosphatidylinositol-4,5-bisphosphate 3 kinase, catalytic subunit alpha), and BRAF (V-Raf Murine Sarcoma Viral Oncogene Homolog B) genes. Additionally, epigenetic alterations involving DNA hypermethylation (CpG island methylator phenotype (CIMP)) play a significant role (Millan et al., 2015).

Mucinous adenocarcinoma is most frequently found in the 51-60 age group, with four individuals (26.7%). Nonetheless, this finding is less consistent with a study by Stewart et al. (2006), where mucinous adenocarcinoma was most prevalent in the 70-79 age group (Stewart et al., 2006). Similarly, Benesch et al. (2020) revealed that mucinous adenocarcinoma in the colon was most prevalent in the 70-85 age group, while in the rectum, it was highest in the 50-69 age group, thus partially aligning with the finding of this study (Benesch & Mathieson, 2020a).

Signet ring cell carcinoma is most commonly observed in the 71-80 age group, with two individuals (66.7%). This result is consistent with a study by Stewart et al. (2006), where signet ring cell carcinoma was highest in the 70-79 age group (Stewart et al., 2006). Based on this study, squamous cell carcinoma is found in the 61-70 age group. Among all cases of squamous cell carcinoma in the large intestine, the rectum is the most common location, followed by the right colon (Linardoutsos et al., 2020; Liu, Du, Zhang, Meng, & Xiao, 2023). Dyson and Draganov (2009) reported that squamous cell carcinoma of the rectum occurs in patients aged 39-93 years, with an average age of 57 years (Dyson & Draganov, 2009).



Similarly, neuroendocrine tumours are also found in the 61-70 age group. The average age at diagnosis of colorectal neuroendocrine tumours is 60 years, likely because many neuroendocrine tumours are incidentally discovered during routine endoscopic examination or surgery for acute inflammation (Maione et al., 2021; Ottaiano et al., 2022). Lastly, this study found lymphoma in the 51-60 age group. The incidence of colorectal lymphoma increases with age, peaking at 50-70 years (Green & Raman, 2015).

## CONCLUSIONS

The prevalence of colorectal polyps and tumours at Sumber Waras Hospital, West Jakarta, from 2015 to 2023, included 113 patients, the majority of whom were males, with the most common age group being 61-70 years. Among non-neoplastic lesions, inflammatory polyps were the most common histopathological feature, whereas adenocarcinoma (NOS) was the most prevalent among all neoplastic lesions. The most common gender for each type of histopathological feature involved all non-neoplastic lesions, such as hyperplastic polyps, inflammatory polyps, and hamartomatous polyps, which were most frequently found in males.

Neoplastic lesions such as adenocarcinoma (NOS), mucinous adenocarcinoma, neuroendocrine tumours, and lymphoma were also predominantly found in males. In contrast, adenomas, signet ring, and squamous cell carcinoma were more frequently found in females. The most common age group for each type of histopathological feature among non-neoplastic lesions included hamartomatous polyps in the 11-20 age group, while hyperplastic and inflammatory polyps were in the 61-70 age group. Among neoplastic lesions, adenomas were most common in the 61-70 and 71-80 age groups; mucinous adenocarcinoma and lymphoma in the 51-60 age group; adenocarcinoma (NOS), squamous cell carcinoma, and neuroendocrine tumours in the 61-70 age group; as well as signet ring cell carcinoma in the 71-80 age group.

To reduce the prevalence of colorectal polyps and tumours, it may be crucial to consider performing histopathological examinations for a thorough evaluation. This approach might be helpful given the wide variety of colorectal polyps and tumours that require different diagnostic and treatment strategies, which are determined based on their histopathological results. According to this study, colorectal polyps and tumours can occur in anyone at any time, particularly with advancing age and more commonly in males. Hence, early detection and regular screenings are essential in managing colorectal health.

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