

Factors Affecting The Incidence of Hemorrhoids: A Literature Review

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Abstract

Hemorrhoids are dilation and inflammation of the veins in the anal region originating from the hemorrhoidal plexus. Hemorrhoidal symptoms are conditions that are signs of the onset (occurrence, outbreak) of hemorrhoids. The symptoms of hemorrhoids are pain, itching, pain, irritation and bleeding. Data on the prevalence of hemorrhoidal symptoms on an international or national scale is currently uncertain because hemorrhoids are not a life-threatening disease and sufferers tend to be embarrassed to reveal it. The incidence of hemorrhoids is certainly influenced by various factors, therefore in this literature review, the author will write a review related to the factors that influence the increase in hemorrhoid incidence rates.

Keywords : *hemorrhoid, hemorrhoid incidence, hemorrhoid risk factors.*

1. Introduction

Hemorrhoid is a disease in the anal region that is quite commonly found in the daily practice of doctors. Hemorrhoids are dilation and inflammation of the veins in the anal area that originate from the hemorrhoidal plexus [1]. Hemorrhoid is a normal structure of the human body consisting of 3 elements, namely mucosa, stroma consisting of blood vessels, smooth muscle, and supporting tissue, and connective tissue [2]. These lesions are very common due to the continuous increase in pressure within the hemorrhoidal plexus [3]. Hemorrhoids cause bleeding, swelling, and pain in the anal canal [4].

Data on the prevalence of hemorrhoidal symptoms on an international or national scale is currently uncertain. The incidence of hemorrhoids occurs in 13%-36% of the general population in the UK [5]. Based on data from The National Center of Health Statistics in the United States, the prevalence of hemorrhoids is approximately United States, the prevalence of hemorrhoids is about 4.4% [6]. In Egypt, hemorrhoids are considered the most common anal region disease with a high prevalence of almost 50% of proctological visits at the Colorectal Unit [7]. In Indonesia, hemorrhoid patients continue to increase. According to Riskesdas data in 2007, the incidence of hemorrhoids in Indonesia was 12.5 million people and is predicted to increase to 21.3 million people by 2030 [8].

Hemorrhoids are divided into 2 : internal hemorrhoids and external hemorrhoids [9]. External hemorrhoids are caused by several diseases while internal hemorrhoids are caused by several factors. is caused by several factors both from individual, social and environmental [10]. However, the accuracy of the incidence is difficult to determine as patients tend to seek self-medication instead of medical treatment. Hemorrhoids are a normal tissue that occurs in everyone. Nonetheless, piles can cause symptoms and discomfort due to many factors [11]. Therefore, in this literature review, the author will write a review related to the factors that influence the hemorrhoid incidence rate.

2. Methods

The method used in making this article is a literature review. This literature review was conducted by looking for factors that influence the incidence of hemorrhoids in the community. The researchers searched several national and international literatures using databases from Google Scholar and PubMed with keywords. The keywords used were hemorrhoid, hemorrhoid incidence, hemorrhoid risk factors.

3. Discussion

3.1 Physiology of Hemorrhoid

The breakdown or destruction of the perianal supporting tissue, which causes the anal cushion to shift, has been identified as the pathophysiologic process of hemorrhoids [5]. Hemorrhoidal plexus venodilation might result from anal cushion displacement that impairs venous drainage [1]. The anal pillow support tissue's ability to

adhere to the rectal wall may be hampered by rectal prolapse [9]. High levels of internal rectal prolapse typically result in a number of symptoms, including frequent bowel movements and straining. Hemorrhoidal prolapse may result from this [1].

3.2 Factors Affecting The Incidence of Hemorrhoid

Based on the results of a review of several journals the exact etiology of hemorrhoids is unknown, but the factors that there are many influence factors that cause the onset of hemorrhoids:

a. Genetic

Family history is a major contributing factor to the incidence of hemorrhoids, but the underlying cause is unknown. This is related to the family's habits in terms of lifestyle, diet and defecation according to the environment and local customs [2]. Weak and thin blood vessel walls can be inherited, but it is not yet known whether it is a major factor in hemorrhoids [12].

b. Age

Age is an immutable risk factor. Gastrointestinal changes in old age occur from the oral cavity to the rectum. Hemorrhoidal complaints often appear at the age of >40 years. With age, the connective tissue weakens so that the hemorrhoids protrude into the anal canal lumen. In addition, the hemorrhoidal veins dilate and form a hemorrhoidal plexus or anal pad within the submucosal layer. This situation increases after the age of 30 years [2].

c. Consumption Pattern

The intended consumption pattern is the lack of consumption of food and lack of drinking water. Dietary fiber is the cellular residue of resistance to hydrolysis by human digestive enzymes, so it cannot be digested [13]. Dietary fiber will absorb water in the colon, so that the volume of feces becomes larger and creates the urge to defecate. Thus, feces are more easily eliminated. Fiber is found in many fruits and vegetables, but also in rice, potatoes, beans and tubers [14]. Insufficient water consumption will cause feces to become dry and hard. Stool with low water and fiber content will cause the stool to stay longer in the colon, resulting in constipation. This requires straining, with a sudden stretching of the anal canal to expel the stool. This is when the anal cushion enlargement and damming occurs [2].

The Indonesian government has issued official standards for the recommended (AKG) recommended for the Indonesian people in the Regulation of the Minister of Health of the Republic of Indonesia Number 75 of 2013. Minister of Health of the Republic of Indonesia Number 75 of 2013. The fiber adequacy rate for ages 16-80 years is 22 - 38 grams/day, while the water adequacy rate for ages 16-80 years is 1.6 - 2.6 liters/day.

d. Defecation pattern

Use of a toilet seat may increase the incidence of hemorrhoids. Anorectal angle is not sufficiently straight in the sitting position, requiring a stronger [15]. In addition, sitting longer on the toilet and feeling that defecation should completely remove all the feces, this may create an obstacle to venous return, tourniquet effect, which will eventually lead to enlarged hemorrhoids [2]. The position during defecation also affects the smoothness of defecation. There are two important factors in defecation, namely anorectal angle and intra-abdominal pressure [16]. In the squatting position, due to maximal flexion of the thighs. This facilitates defecation and reduces the force of straining. Intra-abdominal pressure in the squatting position is lower than in the normal sitting position. With the normal sitting position, although the difference is not statistically significant [17].

Based on research conducted by Sikirov, about the average time spent by respondents for defecation, the results showed that with the squatting position the average time spent is 0.85 minutes, in the sitting position with a pedestal as high as 10 cm spent 1.9 minutes, and for the sitting position it takes 2.1 minutes. This shows that it is easier to defecate in a squatting position than in a sitting position. Respondents also considered that the sitting position was 2-2.5 times more difficult than the squatting position in terms of defecation.

e. Pregnancy

Hemorrhoids are a common complaint during pregnancy, affecting about 1/3 of all pregnant women. Increased intra-abdominal pressure and uterine enlargement during pregnancy are thought to cause enlarged and venous stasis [18]. During pregnancy there is an increase in the hormone progesterone which causes the

peristalsis of the gastrointestinal tract slows down and muscles relax to accommodate the developing fetus, including anal cushion muscles. This results in constipation [19]. In addition, there is also an increase in vascular circulation in the pelvic region and during vaginal delivery there is damage to the anal canal [2].

f. Abdominal Tumor

Abdominal tumors have a major influence on the incidence. Hemorrhoids are tumors in the pelvic region such as ovarian tumors, rectal tumors, and others. These tumors can compress the veins so that the flow is disrupted and cause suppression of the hemorrhoidal plexus [20].

g. Physical activity

The incidence of hemorrhoids will be higher, if physical activity is lacking. Physical activity affects the muscle tone activity of the abdomen, pelvis, and diaphragm, so that the process of peristaltic movement in the colon area is improved. This can help smooth the defecation process. Activity in the form of exercise is a good activity for health [22]. People with long sitting jobs (drivers, employees, students, etc.), standing too long (security guards, bodyguards, etc.) or heavy work (construction workers, laborers, etc.). Heavy work (construction workers, porters, and others) are at high risk for hemorrhoidal events [12].

Research results conducted by Afifah Muthmainnah in 2013, work that is static (lack of mobilization) is static nature (lack of mobilization) has a chance of 6.5 times to suffer from hemorrhoids compared to workers whose nature is static (lack of mobilization). Suffer from hemorrhoids compared to workers whose work is dynamic. A person with heavy activity requires adaptation to the body's system by providing high resistance to the veins. system by giving high resistance to the hemorrhoidal veins and excessive pressure on the hemorrhoidal veins. There will be excessive pressure on the veins in the anal area. In addition there is also excessive pressure on the sphincter ani muscle. These things are the things that affect the occurrence of hemorrhoids [22].

h. Sitting Position and Length of Sitting

The habit of sitting for too long can be one of the causes of hemorrhoids, because sitting for too long without changing position will result in increased intravenous pressure in the anus. So that there can be widening of the hemorrhoidal veins and even protrusion and bleeding [23].

4. Conclusion

From the results of the literature review, it can be seen that the factors that influence the incidence of hemorrhoids are genetic, age, consumption patterns, defecation pattern, pregnancy, abdominal tumor, physical activity, sitting position and length of sitting.

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References

- [1]. Lohsiriwat, V., (2018). Anatomy, physiology, and pathophysiology of hemorrhoids. Hemorrhoids. Coloproctology, 2, pp.9-17.
- [2]. Makmun D (2011). Hemoroid. Dalam: Rani AA, Simadibrata M, Syam AF (eds). Buku Ajar Gastroenterologi. Edisi Ke 1. Jakarta: Interna Publishing Pusat Penerbitan Ilmu Penyakit Dalam, pp: 503-11.
- [3]. Kumar V, Cotran RS, Robbins SL (2007). Buku ajar patologi volume 2. Edisi ke 7. Jakarta: EGC, p: 635.
- [4]. Dorland WAN (2011). Kamus saku kedokteran dorland. Edisi ke 28. Jakarta: Penerbit Buku Kedokteran EGC, p: 509.
- [5]. Lohsiriwat V (2012). Hemorrhoids : From basic pathophysiology to clinical management. World Journal of Gastroenterology, 18(17): 2009-17.
- [6]. Buntzen S, Christensen P, Khalid A, Ljungmann K, Lindholt J, Lundby L, Rossell L, et al. (2013). Diagnosis and treatment of haemorrhoids. Danish Medical Journal, 60(12): 1-9.
- [7]. Ali ZH, El-Sayed NO, Taha NM (2011). Effect of conservative measures in improving hemorrhoid stages and relieving symptoms among patients with hemorrhoid. Journal of American Science, 7(9) : 53-65.
- [8]. Riset Kesehatan Dasar (2013). Badan Penelitian dan Pengembangan Kesehatan Kementerian RI.
- [9]. Sandler, R. S. and Peery, A. F. (2019) 'Rethinking What We Know About Hemorrhoids', Clinical Gastroenterology and Hepatology, 17(1), pp. 8–15. doi: 10.1016/J.CGH.2018.03.020.

- [10]. Damayanti, L. (2017). Gambaran Pasien Hemoroid Di Instalasi Rawat Inap Departemen Bedah Rumah Sakit Umum Pusat Dr. Mohammad Hoesin Palembang Periode Januari Sampai Desember 2012. *Januari*. 661
- [11]. Riwanto I (2010). Usus halus, apendiks, kolon, dan anorektum. Dalam: Sjamsuhidajat R, Jong WD (eds). Buku ajar ilmu bedah. Edisi ke-3. Jakarta: Penerbit Buku Kedokteran EGC, pp: 788-92.
- [12]. Khan RM, Itrat M, Ansari AH, Zulkifle M, Ehtishan (2015). A study on associated risk factors of haemorrhoids. *Journal of Biological and Scientific Opinion*, 3(1): 36-8.
- [13]. Winaktu GJ (2011). Peran serat makanan dalam pencegahan kanker kolorektal. *J Kedokt Meditek*, 16(43): 17-25.
- [14]. Kusharto CM (2006). Serat makanan dan peranannya bagi kesehatan. *Jurnal Gizi dan Pangan*, 1(2): 45-54.
- [15]. Sikirov D (2003). Comparison of straining during defecation in three positions. *Digestive Diseases and Sciences*, 48(7): 1201-5.
- [16]. Ahmed I, Shabbir MN, Iqbal MA, Najam MS (2013). Role of defecation postures on the outcome of chronic anal fissure. *Pakistan Journal of Surgery*, 29(4) : 269-71.
- [17]. Sakakibara R, Tsunoyama K, Hosoi H, Takahashi O, Sugiyama M, Kishi M, Ogawa E , *et al.*(2010). Influence of body position on defecation in humans. *LUTS*, 2:16-21.
- [18]. Christie JA, Rose S (2011). Constipation, diarrhea, hemorrhoids and fecal incontinence. *American College of Gastroenterology*. <http://gi.org/wpcontent/uploads/2011/07/institute-PregnancyMonograph.pdf> - accessed on 27 November 2023
- [19]. Sembiring LP (2015). Konstipasi pada kehamilan. *JIK*, 9(1): 7-10.
- [20]. Fox, A., Tietze, P. H., & Ramakrishnan, K. (2014). Anorectal conditions:hemorrhoids. *FP essentials*, 419, 11–19.
- [21]. Afifah Muthmainnah, Masrul, A. Z. (2013). Artikel Penelitian Peranan Diet Rendah Serat Terhadap Timbulnya Hemoroid Di. *Jurnal Kesehatan Andalas*.
- [22]. Nugroho, S. H. P. (2014). Hubungan Aktivitas Fisik Dan Konstipasi Dengan Derajat Hemoroid Di Urj Bedah Rsud Dr. Soegiri Lamongan, 02, *NO.XVII*.
- [23]. Fridolin, W., Ismael Saleh, M. and Hernawan, A.D., (2016). Faktor Risiko Yang Berhubungan Dengan Kejadian Hemoroid Pada Pasien Di Rsud Dr Soedarso Pontianak. *Fakultas Ilmu Kesehatan: Prodi Ilmu Kesehatan Masyarakat*.