

THE RELATIONSHIP BETWEEN OBESITY AND THE INCIDENT OF LATERAL INGUINAL HERNIA AND MEDIAL INGUINAL HERNIA IN ELDERLY MEN AT THE CENTRAL GENERAL HOSPITAL PROF. DR. I.G.N.G. NGOERAH DENPASAR

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ABSTRACT

Background : Inguinal hernia is a hernia that often found in elderly men. As many as 75% of hernia cases are inguinal hernia patients, 40% of patients aged 45-74 years, and 47% aged over 75 years. Elderly patients who experience inguinal hernias have a high risk of morbidity related to the postoperative healing process. Obesity is excessive or abnormal fat accumulation which causes a risk of health problems. Several studies say that the incidence of inguinal hernias is lower in obese patients than in normal weight. However, there is also research says that obesity has a significant relationship with the incidence of inguinal hernias. Obesity is a risk factor for inguinal hernias. This research aims to determine the relationship between obesity and the incidence of lateral inguinal hernias and medial inguinal hernias in elderly men at Hospital Prof. Dr. I.G.N.G Ngoerah Denpasar.

Method : This study used an analytic observational design with a retrospective approach on 49 secondary data obtained from medical records using a total sampling method that met inclusion and exclusion criteria. Data were processed using Microsoft Excel and SPSS.

Result : The statistical test results show $p = 0,624$ which means there is no significant relationship between obesity and lateral inguinal hernias and medial inguinal hernias in elderly men.

Conclusion : This study concluded that there was no significant relationship between obesity and lateral inguinal hernias and medial inguinal hernias in elderly men.

Key words: elderly men, inguinal hernia, obesity

INTRODUCTION

A hernia is generally a loss of a specific body part from the body. Hernias occur more often in men than women¹. Inguinal hernias often occur in the elderly due to the weakening the locus minoris resistance (inguinal annulus internus) so that the inguinal canal can enter it and increase intra-abdominal pressure². According to data from the Indonesian Ministry of Health, inguinal hernia is ranked eighth with 18,145 cases³. According to the Bali health profile in 2014, inguinal hernia is a disease in the top 10 inpatients at Bali Provincial Regional Hospital⁴.

As many as 75% of hernia cases are inguinal hernia patients with 40% of age 45-74 years and 47% over 75 years². Elderly patients who experience inguinal hernias have a high risk of morbidity related to the postoperative

healing process. This happens because elderly patients have asymptomatic and mild symptoms or comorbid conditions⁵. Obesity is excessive or abnormal fat accumulation, posing a health problem risk. A body mass index (BMI) of over 25 consider obesity⁶. Several studies say that the incidence of inguinal hernias is lower in obese patients than in those with normal weight⁷. However, some study says that obesity has a significant relationship with the incidence of inguinal hernias, so obesity is a risk factor for inguinal hernias⁸.

Obesity is a condition in which the body has excessive or abnormal fat accumulation, causing many health problems. Obesity can be measure using body mass index (BMI)⁶. Obesity can be establish if the BMI exceeds the limit of 25. If the BMI is between 25 and 29.9, it can be consider obesity type I. If the BMI exceeds 30, it can be consider obesity type II⁹. Obesity can be a risk factor for

inguinal hernias. Obesity can cause the abdominal wall muscles to become weak. This condition can happen because obesity has large internal pressure, causing internal organs and fatty tissue to become herniated. Obesity can also cause increase intra-abdominal pressure and the risk of recurrence. Apart from that, cases of complications also often occur in inguinal hernias experience by obese patients¹⁰.

Inguinal hernia is a hernia that often occurs in as many as 75% of sufferers. Inguinal hernia patients have 25 times more cases in men than women. Lateral inguinal hernia is the most common hernia suffers by patients with a percentage of 50%, while medial inguinal hernia has a percentage of 25%. Inguinal hernias can occur at any age, but this is more common in patients age 45 – 75 years². Several factors can influence the occurrence of an inguinal hernia. Male patients, elderly, patent processus vaginalis, systemic connective tissue disorders, and BMI are high-risk factors for lateral inguinal hernia¹¹.

The patent processus vaginalis form by the bulging of the peritoneum during testicular descent so that the right testicle descends more than the left. Lifting weights and standing or walking at high intensity are also risks for lateral inguinal hernias. This is due to high intra-abdominal pressure. Meanwhile, medial inguinal hernias are caused by changes in connective tissue that control the ratio of collagen fibers, fascia formation, and enzymes that play a role in tissue formation during homeostasis¹¹. To prevent inguinal hernias, avoid coughing too hard, straining, smoking, lifting too heavy weights, and losing weight¹². The diagnosis of an inguinal hernia is made through history and physical examination. In the anamnesis, the patient do not show symptoms until he realize swelling in the groin. However, some patients show symptoms of sudden pain and increase in severity when lifting weights. Physical examination is done through inspection, palpation, percussion, and auscultation. On inspection, the lump in the groin do not disappear even though the patient was lying down. On palpation, it can be assess with the index finger pushing the contents of the hernia by pressing it through the external annulus and then the patient ask to strain. On percussion, find a bloated stomach. On auscultation, there is intestinal obstruction that cause hyperperistaltic¹³.

Older adults can experience several changes in the body, including a reduction in bone density, susceptibility to friction in the joints, and aging of the muscle structure¹⁴. Musculoskeletal changes include decreased height,

redistribution of muscle mass and subcutaneous fat, muscle atrophy, and increase bone porosity. According to WHO, the age limit for older adults is 45 – 59 years as middle age, 60 – 74 years as young old age, 75 – 90 years as advanced old age, and above 90 as very advanced old age¹⁵. One of the risk factors for inguinal hernias is advance age or the elderly. This can occur because older adults experience progressive weakness of the abdominal wall collagen tissue⁵. In addition, decrease function of various organ systems and increase intra-abdominal pressure are also closely related to inguinal hernias in the elderly¹⁶.

METHOD

The research design was analytical observational research using a retrospective study approach. Data was collected through secondary data, namely medical records from February to July 2023 at Central General Hospital, Prof. Dr. I.G.N.G Ngoerah Denpasar Bali. The samples that would be used in this research was elderly male patients with lateral inguinal hernias and medial inguinal hernias at Hospital Prof. Dr. I.G.N.G Ngoerah Denpasar for the period 1 January 2021 to 31 December 2022 who meet the inclusion and exclusion criteria. The inclusion criteria was elderly men who has inguinal hernia with complete medical records. The exclusion criteria were elderly men who has inguinal hernia with chronic cough and uncomplete medical record. The sampling technique used in this research was total sampling within time limits specified by author. There was 54 cases in total but the number of samples that met inclusion dan exclusion criteria was 49 data. The data that has been collected will be processed using Microsoft Excel and a computer program in the form of SPSS. The data would be analyzed and presented as a frequency data table. The research has been approved by the Research Unit Ethics Committee and RSUP Prof. Dr. I.G.N.G Ngoerah Denpasar via ethical letter number 230/UN.14.2.2.VII.14/LT/2023.

RESULT

In this study, 49 cases of lateral inguinal hernias and medial inguinal hernias in elderly men were obtained as samples that met the inclusion and exclusion criteria. This research requires medical record number, patient name, place and date of birth, patient age, gender, type of inguinal hernia, body weight, height, and Body Mass Index (BMI).

Table 1. Distribution of Obese Patients

BMI	f	%
Normal	32	65.3
Obese	17	34.7
Total	49	100

Based on the research results, the prevalence of elderly men at Hospital Prof. Dr. I. G. N. G. Ngoerah who has a normal

weight from medical record data, was more likely than elderly men who have an obese body weight.

Table 2. Distribution of Inguinal Hernia

Type of Inguinal Hernia	<i>f</i>	%
lateral inguinal hernia	42	85.7
medial inguinal hernia	7	14.3
Total	49	100

From a total of 49 samples, the distribution of elderly men diagnosed with lateral inguinal hernia at Hospital Prof. Dr.

I. G. N. G. Ngoerah had more elderly men diagnosed with medial inguinal hernia.

Table 3. The relationship between obesity and inguinal hernia

BMI	Types of Inguinal Hernia						<i>P Value</i>
	Lateral inguinal hernia		medial inguinal hernia		Total		
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	
Normal	28	57.1	4	8.2	32	65.3	0.624
Obese	14	28.6	3	6.1	17	34.7	
Total	42		7		49		

The statistical test results show a p -value = 0.624, which means there was no significant relationship between obesity and lateral inguinal hernias and medial inguinal hernias in elderly men.

DISCUSSION

Based on the research above, the number of elderly male patients with normal weight who are diagnose with inguinal hernias is higher than elderly men who are obese. This incidence is because BMI only affects whether the abdominal wall muscles are weak. Meanwhile, the abdominal wall muscles are not the only factor in hernia occurrence⁷. In theory, obesity causes an increase in intra-abdominal pressure, which can cause hernias. However, those with a low (underweight) and normal BMI who do much activity can experience inguinal hernias. This condition can occur because excessive activity can involve contraction of the abdominal muscles, so an increase in intra-abdominal pressure can occur¹⁰. The intestine to protrude through a weak spot or thin tear in the abdominal wall. People with light activity are not at risk of developing a hernia because no heavy pressure pushes the intestine through the inguinal annulus¹⁷.

Research also states that there is no significant relationship between obesity and inguinal hernias at Sumber Waras Hospital in 2019 – 2020. Based on this research, obesity cannot be a risk factor for inguinal hernias. The statistical analysis of this study shows that the analysis has passed the null value, which means that if, in reality, obesity can cause inguinal hernias, then this is just a coincidence¹⁸. As age increases, the risk factor for inguinal hernia increases by 5%¹⁹. In the elderly, there is a process of gradual loss of the tissue's ability to repair itself and maintain its normal function. The elderly's physique can experience physiological decline as they get older²⁰.

The sphincter and muscle strength that holds tissue together in the elderly has weakened so that the body's muscles easily stand out²¹.

However, there are contradictory research results state that body mass index has a significant relationship with the incidence of inguinal hernias. The respondents use in the study are age 12 - 65 years. In this study, the majority of respondents diagnose with inguinal hernias are respondents who were overweight - obese. A large amount of preperitoneal fat causes the weakening of the locus minoris. If fat infiltrates the omentum and mesentery, intra-abdominal pressure will increase, pushing the internal organs to protrude into an inguinal hernia⁸. Obesity has a 7.2 times greater risk of developing an inguinal hernia. Obesity can also increase the risk of complications in patients who have been diagnosed with an inguinal hernia. For every 1 kg/m² increase in body mass index in obese patients, the risk of complications from inguinal hernia will increase by 1.03 times²².

CONCLUSION AND SUGGESTION

Based on the results of research on the relationship between obesity and lateral inguinal hernias and medial inguinal hernias in elderly men at Central General Hospital Prof. Dr. I.G.N.G Ngoerah Denpasar from 2021-2022, found 49 cases of inguinal hernia that met the inclusion criteria. This study concluded that there was no significant relationship between obesity and lateral inguinal hernias and medial inguinal hernias in elderly men. Regarding the results of research that the author has conducted regarding the relationship between obesity and lateral inguinal hernias and medial inguinal hernias in elderly men at RSUP Prof. Dr. I. G. N. G. Ngoerah, they suggested that other researchers study more deeply the relationship between obesity and inguinal hernias in elderly men to enrich knowledge about this matter.

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