

## Epidemiological analysis of the clinical profile of patients with incarcerated hernia at the Ceilândia Regional Hospital in the Federal District



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**ABSTRACT**

The patient with the picture of incarcerated inguinal hernia is in an emergency stage, requiring an emergency surgical procedure. Seeking to evaluate this picture, to understand the clinical profile, to foster a clinical-epidemiological analysis, analyzing

the important variables in this type of patient, define the risk factors and most commonly found conditions. It is also necessary to address the intraoperative findings, complications and postoperative time. Thus, changes could be made in relation to the conditions encountered, which may change the clinical outcome of many patients. In a descriptive qualitative observational study, with 40 patients with the clinical picture of incarcerated hernia, all patients underwent hernioplasty. Following the same surgical technique. The primary outcome was that only patients with comorbidities/risk factors had complications and the second outcome was that patients undergoing the surgical procedure did not die. After the follow-up of similar pictures for 12 months. The first outcome, it was possible to observe that the patients with previous comorbidities/risk factors, 35 (87.5%) of the 40 selected, had the following conditions: 14 (35%) patients with obesity, 7 (17.5%) were chronic smokers and 14 (35%) of the patients had previous tenesmus and 5 patients had no risk factors. Among the comorbidities, 1 patient had Down syndrome, 3 patients had liver cirrhosis, 8 had systemic arterial hypertension, 5 were defined as difficult to control, 4 with diabetes mellitus, 6 patients with anterior diverticulosis and 6 with chronic constipation. The secondary outcome occurred with 40 patients, since all of the group were operated on as a matter of urgency, in addition to patients who are not submitted to the surgical procedure die. It is concluded that the 5 patients who did not present comorbidities/risk factors, arrived at the hospital in a milder picture compared to the other (35) patients, having a better recovery and fewer days of hospitalization. Since preventive measures can be implemented for patients who have hernia, it is recommended to monitor the risk factors, in order to avoid severe conditions and long hospitalizations.

**Keywords:** Incarcerated hernia, Hernia, General surgery, Digestive system.

**1 INTRODUCTION**

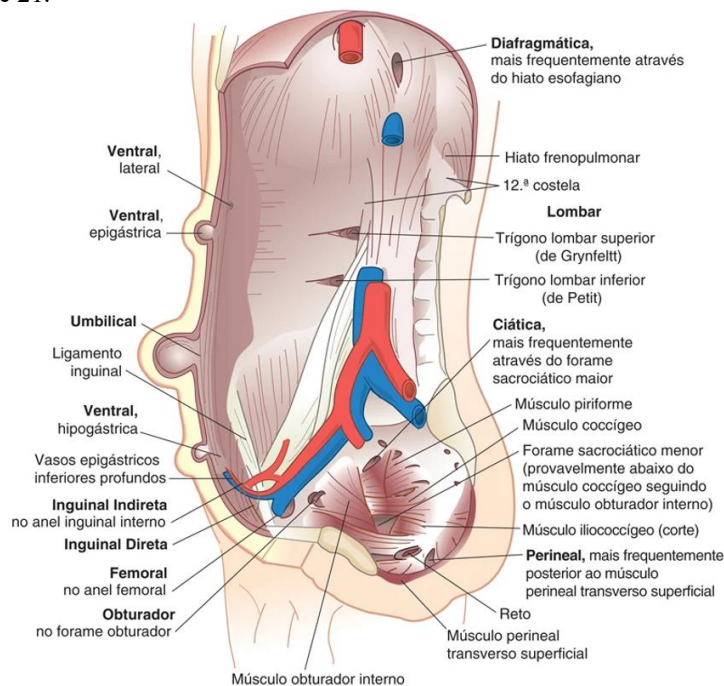
Hernia is a word derived from Latin and means rupture. In medicine it is the definition of the protrusion of an organ or tissue through the walls that surrounds it and can occur in various parts of the human body and is associated with the lack of coverage of the fascia and aponeurosis by striated muscle. Anatomically the hernia originates from a neck or hole in the innermost musculoaponeurotic layer and the hernial sac is formed by peritoneum.



The causes for hernias can be congenital, such as the persistence of the peritoneum-vaginal conduit, some metabolic to even external syndromes can also be associated with smoking that decreases skin thickness, bone density and causes muscle toxicity. Hernias can be classified into internal when the protrusion occurs within a defect inside the peritoneal cavity, or external when it crosses all layers of the abdominal wall or even interparietal when it is limited to the musculoaponeurotic layer of the abdominal wall.

The most prone site to suffer herniations is the abdominal cavity, with the most affected areas being the inguinal, femoral and umbilical, the linea alba, the lower portion of the semilunar line and sites of anterior incisions any segment of the abdominal wall. In the groin, inguinal hernias are located, subdivided into indirect, direct is combined, and femoral; umbilical, epigastric and Spiegel's hernias occur in the anterior wall; in the posterior wall the lumbar hernia, in the superior triangle and inferior triangle and, finally, in the pelvic region the hernias of the obturator, sciatica, perineal. There is a higher prevalence of occurrence in the inguinal region.

Figure 01: Types of hernias of the abdominal wall. (From Dorland's illustrated medical dictionary, ed 31, Philadelphia, 2007, W.B. Saunders, Plate 21.



## 2 METHODS

### 2.1.1 TRIAL SUPERVISION

The epidemiological analysis of the clinical profile of patients with incarcerated hernia at the Hospital Regional da Ceilândia in the Federal District was a qualitative descriptive observational study that was conducted at the Hospital Regional da Ceilândia in the Federal District. The trial design and baseline characteristics of the patients have been preserved and not published. The study was designed



at the Hospital and supervised by the Regional Ethics and Research Committee, and was approved for production. The study has no funders. The authors take responsibility for the accuracy and completeness of the data and analyses, as well as the fidelity of the essay.

#### Patients:

During the period analyzed, a prevalence of males was observed among the patients treated at the Regional Hospital of Ceilândia (HRC) with incarcerated hernia. The distribution by sex is 67.5% (27) men and 32.5% (13) women, totaling 40 patients. Patients who had an incarcerated hernia during the study period were included. The inclusion and exclusion criteria are in the supplementary appendix. It was based on the collection of secondary data, available in the "Trakcare" system – a system used in the patient care services of secondary hospitals in the Federal District.

#### Findings:

The primary outcome was that only patients with comorbidities/risk factors had complications. Among them, the most significant that happened to 35% of the patients (14) was the length of hospitalization that lasted more than 4 days, due to a longer delay in presenting improvement. In addition, it was possible to observe that in 5 patients (12.5%), of those who had previous comorbidities/risk factors, they presented delay for diuresis to return to normal. The secondary outcome was that the patients submitted to the surgical procedure did not die, since this confirms the surgical protocol.

#### Statistical analysis:

**TABLE 1 - RISK FACTORS AND COMBITIES IN INCARCERATED PATIENTS WITH HERNIA**

RISK FACTORS	COMBITIES
<ul style="list-style-type: none"><li>• Smoking</li><li>• Chronic constipation</li><li>• Tenesmus</li><li>• Obesity</li><li>• Chronic cough</li></ul>	<ul style="list-style-type: none"><li>• Hepatical cirrhosis</li><li>• Diabetes Mellitus</li><li>• Down's syndrome</li><li>• Systemic Arterial Hypertension</li><li>• Previous infarction</li></ul>

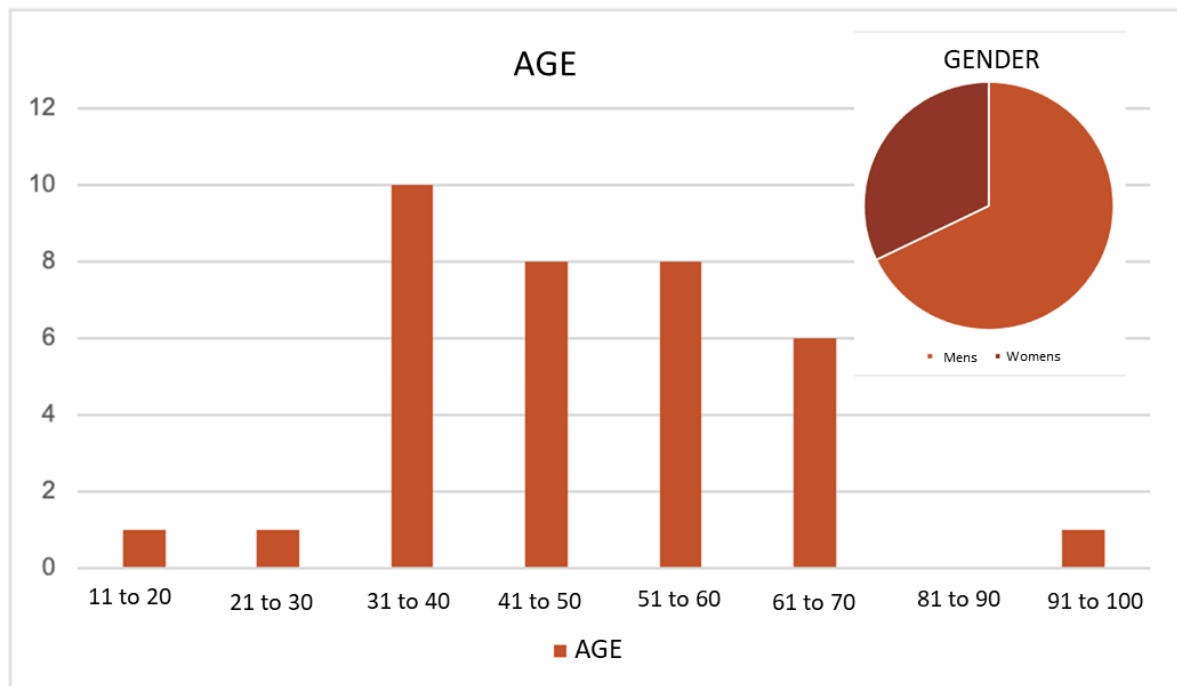
Among the patients analyzed, they had the risk factors and comorbidities mentioned in Table 1. We analyzed each medical record, looking for similar patients with specific characteristics.

### 3 FINDINGS

The study aimed to analyze the profile of patients with incarcerated hernia. When we analyzed the 40 cases and all patients were discharged, it was possible to conclude the study and proceed to the



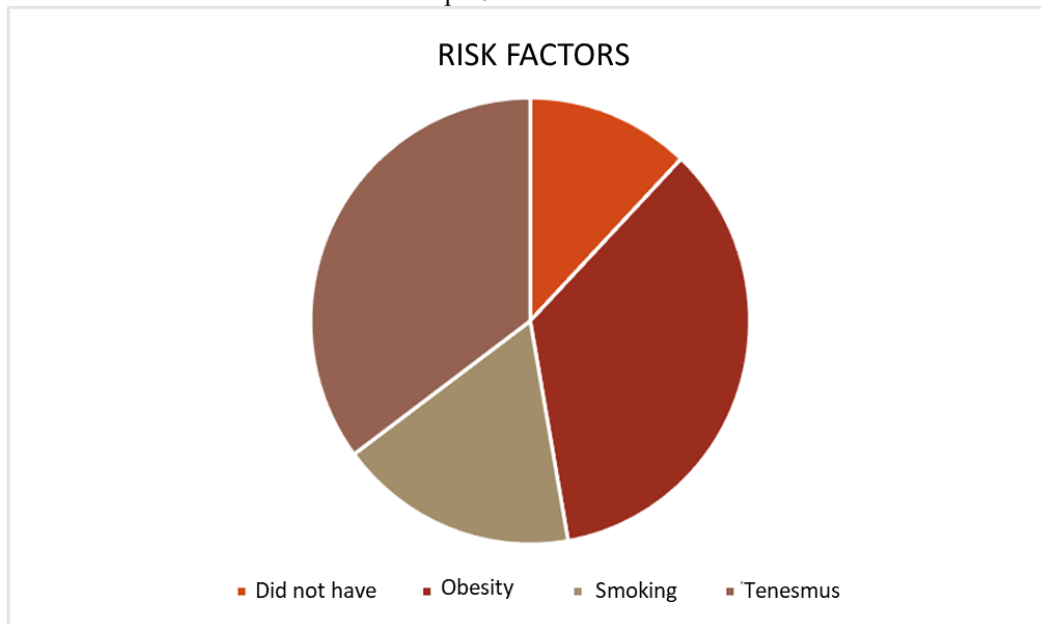
analysis of the data we were able to identify. All analyses were aimed at the prognosis. The results were analyzed using time and event methods.



During the period analyzed, a prevalence of males was observed among the patients treated at the Regional Hospital of Ceilândia (HRC) with incarcerated hernia. The distribution by sex is 67.5% (27) men and 32.5% (13) women, totaling 40 patients, as can be seen in graph 01. Regarding the distribution by age group, it is observed that there were only 01 patient in the range of 11 to 20 years, 1 patient between 21 and 30 years, 10 between 31 and 40, 08 in the range of 41 to 50 and 51 to 60, respectively, 06 between 61 and 70 and 06 over 71 years. The concentration in adult patients is noted, with 38 patients older than 31 years.

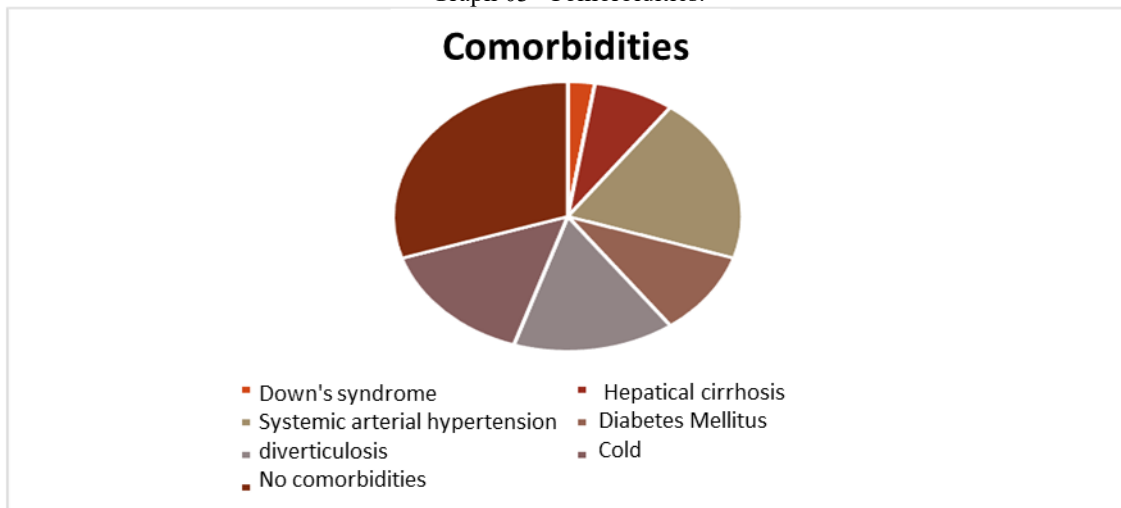


Graph 02- Risk factors.



Among the risk factors analyzed in the patients: 35 had at least 1 risk factor and 5 no associated factors, among these factors 14 (35%) had obesity, 7 (17.5%) reported being chronic smokers and 14 (35%) had previous tenesmus.

Graph 03- Comorbidities.



Among the comorbidities, 1 patient had Down syndrome (2.5%), 3 patients had liver cirrhosis (7.5%), 8 with systemic arterial hypertension (20%), 5 of which were defined as difficult to control, 4 with diabetes mellitus (10%), 6 patients with anterior diverticulosis (15%) and 6 with chronic constipation (15%). The secondary outcome occurred with 40 patients, since all of the group were operated on as a matter of urgency, in addition to patients who are not submitted to the surgical procedure die.



### 3.1.1 ACCOMPANIMENT

After the follow-up of similar pictures for 12 months. The first outcome, it was possible to observe that the patients with previous comorbidities/risk factors, 35 (87.5%) of the 40 selected, had the following conditions: 14 (35%) patients with obesity, 7 (17.5%) were chronic smokers and 14 (35%) of the patients had previous tenesmus and 5 patients had no risk factors. Among the comorbidities, 1 patient had Down syndrome, 3 patients had liver cirrhosis, 8 had systemic arterial hypertension, 5 were defined as difficult to control, 4 with diabetes mellitus, 6 patients with anterior diverticulosis and 6 with chronic constipation. The secondary outcome occurred with 40 patients, since all of the group were operated on urgently, in addition to patients who are not submitted to the surgical procedure will die

## 4 DEBATE

Hernia is a disease with high prevalence worldwide and its development is multifactorial, since it is associated with age, lifestyle habits, genetics, comorbidities among other factors. Of which are part smoking, which can affect various pathogenic pathways of collagen formation and degradation.

According to the studies, hernia incarceration mainly affects adults of productive age. According to our research, there actually was a higher prevalence at the ages of 31 to 40 years.

Hernias represent a worldwide problem and although it does not have a known incidence the risk of developing inguinal hernias throughout life is estimated to be around 25% for men and less than 5% for women. Our study agrees with the references, evidencing a prevalence of males among the patients attended.

In addition, tobacco use is related to increased recurrence of hernias. A large prospective series of 4,855 patients undergoing different types of gastrointestinal surgery shows that smokers have a 64% higher risk of postoperative wound infections and an 80% higher risk of postoperative rupture of wounds or sutured tissue in the first 30 days after surgery.

The effort to evacuate is another factor that implies the development of hernias, as it causes increased pressure in the abdominal cavity, one of the main etiopathogenic mechanisms.

Cough in smokers or patients with chronic obstructive pulmonary disease (COPD), family history and constipation are the main risk factors for increasing the pressure in the abdominal cavity (Sperandio, 2008) and favor the passage of structures through places where the abdominal wall is fragile



## 5 CONCLUSION

In view of the above, it was observed that the cases of incarcerated hernia in the Regional Hospital of Ceilândia confirm the data of the studies on the subject regarding the epidemiological characteristics of the involvement of hernias.

It was noticed that the development of the hernia is multifactorial, but the need for a local predisposition for their formation must be considered. It was also verified the high prevalence in male adults, in addition, the most preponderant risk factor in the cases is tenesmus and smoking. Therefore, all the data corroborate with the information in the bibliography on the subject.

This work consists of alerting the health professional to prioritize the epidemiology of the patient for the diagnosis of the disease, since this diagnosis is relatively simple, when observing the clinical history and evaluating by computed tomography and ultrasonography.

Finally, the treatment of hernias is a challenge for surgeons, mainly due to the lack of consensus on the best techniques and also due to the large number of postoperative recurrences. Thus, it is necessary to create guidelines based on scientific evidence that guide the best techniques for treatment.





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