



Original Article

**Epidemiological characterization of ostomized patients attended in referral Center from the city of Maceió, Alagoas, Brazil**☆



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ABSTRACT

**Introduction:** Several clinical conditions imply the realization of a bowel ostomy, as a treatment option. However, the presence of a stoma is an important limitation in the quality of life of the ostomized patient.

**Aim:** To define the epidemiological profile of patients enrolled in the Ostomy Program from two reference services in the city of Maceió, Alagoas, regarding gender, age, classification (as permanent or temporary), type of ostomy with respect to the bowel segment used, and causes.

**Method:** This was a descriptive cross-sectional study whose data were obtained from registration forms of active patients in Ostomy Programs on May 2013.

**Results:** Of 216 patients analyzed, 50.5% were female and 49.5% male. The age group with the highest number of cases was that between 60 and 69 years (23.6%) and the average age was 51.3 years. Colostomies accounted for 89.4% of the procedures performed, and 56.9% of procedures were temporary ostomies. As for the cause, the most prevalent was colorectal cancer (40.7%), followed by trauma (18.1%) and acute abdomen (12.0%).

**Conclusion:** The study provides relevant data that can be used as input for prevention and strategies to improve the health of the ostomized population.

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## Caracterização epidemiológica de pacientes ostomizados atendidos em centro de referência, Maceió, Alagoas, Brasil

### R E S U M O

#### Palavras-chave:

Ostomia  
Epidemiologia descritiva  
Neoplasias colorretais  
Colostomia  
Ileostomia

**Introdução:** Diversas condições clínicas implicam a realização de uma ostomia intestinal como opção de tratamento. Entretanto, a presença de um estoma é um importante limitador na qualidade de vida da pessoa ostomizada.

**Objetivo:** Definir o perfil epidemiológico dos pacientes cadastrados no Programa de Ostomizados de dois serviços de referência em Maceió, Alagoas quanto a gênero, idade, classificação da ostomia em definitiva ou temporária, tipo de ostomia quanto ao segmento intestinal utilizado e causas.

**Método:** Trata-se de um estudo transversal descritivo cujos dados foram obtidos de fichas cadastrais de pacientes ativos em Programas de Ostomizados no mês de maio de 2013.

**Resultados:** Dos 216 pacientes analisados, 50,5% eram do gênero feminino e 49,5% do gênero masculino. A faixa etária com maior número de casos foi a de 60 a 69 anos (23,6%) e a média de idade foi de 51,3 anos. As colostomias representaram 89,4% dos procedimentos realizados e 56,9% das ostomias foram temporárias. Quanto à causa, a mais prevalente foi o câncer colorretal (40,7%), seguido dos traumatismos (18,1%) e do abdome agudo (12,0%).

**Conclusão:** O estudo apresenta dados relevantes que podem ser utilizados como subsídio para ações de prevenção e estratégias de melhoria da saúde da população ostomizada.

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## Introduction

Ostomy is a derivative of two words of Greek origin, *os* and *tomé*, which means “opening of a mouth” and indicate the externalization of a hollow viscus in a different point of its natural orifice, aiming at the construction of a stoma.<sup>1-4</sup>

Several criteria are used for the classification of stomata. Considering their function, these procedures can be divided into ventilation, nutrition, drainage or elimination stomata.<sup>5</sup> These latter constitute a surgical opening in the abdominal wall, aiming to promote the elimination of waste such as feces and urine. Urinary stomata are performed on patients with diseases involving the renal pelvis, ureters, bladder and urethra, in order to preserve renal function. On the other hand, an intestinal stoma is recommended when some part of the bowel suffers dysfunction, obstruction or injury.<sup>4</sup>

According to the exteriorized intestinal segment, an intestinal stoma can also be termed as an ileostomy, colostomy or cecostomy. Colostomy is the generic name of the procedure to be performed, being characterized by the exteriorization of the colon through the abdominal wall, for the purpose of fecal elimination. On the other hand, the artificial opening between ileum, at the small intestine, and the abdominal wall is referred to as an ileostomy; and between the caecum, also at the small intestine, and the abdominal wall is referred to as a cecostomy.<sup>6</sup>

Ostomies can still be classified as temporary or permanent, depending on the etiology of the disease that led to its creation. Temporary ostomies are created to protect an anastomosis, in view of its closure in a short time; on the other hand, permanent ostomies are performed when there is no possibility of restoring the bowel transit.<sup>1</sup> The main

advantage of performing an ostomy, in relation to the primary repair, is the theoretical principle of reducing the morbidity and mortality of a suture dehiscence, or of an intra-abdominal infection.<sup>7</sup>

The clinical conditions that lead to the construction of a bowel ostomy are related to benign and malignant diseases involving some body organs, being very common in oncology, trauma and gastroenterological surgery.<sup>8</sup> Among the most common are traumas, congenital disorders, inflammatory diseases and colorectal tumors.<sup>1,9-12</sup>

According to estimates of the National Cancer Institute (INCA) for the year 2012, in Brazil the colorectal cancer appears as the third most common neoplasia in both men and women, except for the non-melanoma skin tumors. The incidence and mortality are higher in men, and a good prognosis is considered if the condition is diagnosed in its early stages.<sup>13</sup> The surgical resection of the affected site and the implementation of a permanent colostomy constitute the most effective therapy.<sup>14</sup>

Although most studies consider cancer as the leading cause of bowel ostomy creation, abdominal trauma has also been implicated as an important cause, especially in emergency care reference hospitals, which reflects the social reality with its high rates of violence.<sup>2,15</sup>

Since the twentieth century, a large progress in surgical techniques used in ostomy creation and in the equipment and devices available have been observed, as well as a growing concern for the quality of life, considering that the presence of a stoma can be a serious limiting factor for the quality of life of ostomized patients.<sup>4,14,16,17</sup>

In this context, several epidemiological studies have been conducted with ostomized patients<sup>2-4,6,12,14-16,18-23</sup> in order to obtain a better understanding of their aspects of life, thus

**Table 1 – Numeric and percentage distribution of patients enrolled in the Ostomy Program of CACON and Pam Salgadinho, according to gender and age (Maceió, 2013).**

Age group (years)	Female		Male		Total	
	n	%	n	%	n	%
<10 years	03	2.8%	08	7.5%	11	5.1%
10–19 years	04	3.7%	06	5.6%	10	4.6%
20–29 years	01	0.9%	16	15%	17	7.9%
30–39 years	09	8.3%	16	15%	25	11.6%
40–49 years	15	13.8%	11	10.3%	26	12%
50–59 years	21	19.3%	14	13.1%	35	16.2%
60–69 years	28	25.7%	23	21.5%	51	23.6%
70–79 years	18	16.5%	08	7.5%	26	12%
>80 years	10	9.2%	05	4.7%	15	6.9%
Total	109	100%	107	100%	216	100%

allowing for measures to be taken to minimize the deterioration of quality of life after the stoma creation.

Based on the above considerations, this study aims to characterize epidemiologically ostomized patients in two referral centers: *Centro de Alta Complexidade em Oncologia (CACON)* e Pam Salgadinho.

The research project was submitted to the Ethics Committee in Research of the *Universidade Federal de Alagoas*, being approved on April 2, 2013, under number 13195813.2.0000.5013 and in accordance with ethical principles. The researchers emphasize that the confidentiality of information and the identification of cases were secured, representing no harm to affected individuals. The research was conducted in accordance with the ethical principles established by Resolution 466/2012 CONEP/MS.

## Methods

This is a descriptive, cross-sectional study using data from patients enrolled in the Ostomy Program of CACON seen at the Hospital Universitário Hospital Professor Alberto Antunes (HUPAA) and in the Ostomy Program of the Emergency Care Unit (*Unidade de Pronto Atendimento/UPA*), Pam Salgadinho, both in the city of Maceió, Alagoas.

The data collection was conducted in May 2013, through a questionnaire based on the registration forms of active ostomized patients during this period. To form the sample of this study, all ostomized patients registered in CACON or Pam Salgadinho Ostomy Program were included. Those patients who underwent bowel transit reconstruction or with death outcome were excluded.

The collected data were separated into nominal variables, such as gender, cause of ostomy, type of ostomy and its permanence time (permanent or temporary), besides numerical variables such as age. These data were processed and analyzed using Microsoft® Excel program.

## Results

In total, 216 cases were analyzed, of which 53 patients from CACON and 163 from PAM Salgadinho, besides five patients whose data in medical records were not properly filled and therefore were excluded from the study. From the cases

analyzed, 109 patients (50.5%) were female and 107 (49.5%) were male. The mean age was 51.3 years (45.1 years for males and 57.3 years for females) and the median age was 55 years. According to [Table 1](#), the age group with the highest prevalence was that between 50 and 69 years (39.8%).

In [Table 2](#), in relation to the bowel segment used, 193 (89.4%) were colostomies and 23 (10.6%) were ileostomies; according to stoma permanence time, 93 (43.0%) were permanent and 123 (57%) were temporary.

As for the cause that led to stoma creation ([Table 3](#)), the most prevalent was colorectal cancer, with 88 cases (40.7%), of which 64 were located in the rectum, 13 in the colon, six in the rectosigmoid junction, four in the sigmoid and one in an unspecified site. The second leading cause of ostomy was trauma with 39 cases (18.1%), of which 31 were due to gunshot injury, three due to knife injury, four from closed abdominal trauma and one from an unknown cause. Acute abdomen represented the third leading cause of ostomy with 27 cases (12.5%), 14 with obstructive origin, seven inflammatory cases, three by perforation and three from an unspecified origin. Gynecological malignancies represented the fourth leading cause with 20 cases (9.3%), of which 17 cases were of cervical cancer and three cases of ovarian cancer.

Congenital diseases were observed in 10 cases (4.6%): five cases of Hirschsprung disease and five of imperforate anus. There were also nine cases (4.2%) of inflammatory bowel disease: seven cases of Crohn's disease and two of ulcerative colitis; and seven cases (3.2%) of Chagas megacolon, four (1.9%) of anal cancer, two (0.9%) of carcinomatosis, and two (0.9%) of bowel transit change due to decubitus eschars. Eight other causes of ostomy were represented by only one case each, amounting each to 0.4% of total cases and being represented by: anal abscess, retroperitoneal stroma neoplasia, Ogilvie syndrome, bladder cancer, rectal-cutaneous fistula, colorectal anastomosis dehiscence, infection at the surgical site due to hip disarticulation procedure and one of unknown cause.

## Discussion

Of 216 patients studied, the gender ratio was very close to 1:1, similar to results of other studies (2, 14, 17, 20). In those studies showing a significantly higher amount of male versus female gender, the leading cause of ostomy was trauma,<sup>7,18,21</sup>

**Table 2 – Numeric and percentage distribution of patients enrolled in the Ostomy Program of CACON and Pam Salgadinho, according to type and length of stay with ostomy (Maceio, 2013).**

Type	Temporary		Definitive		Total	
	n	%	n	%	n	%
Colostomy	104	84.6%	89	95.7%	193	89.4%
Ileostomy	19	15.4%	4	4.3%	23	10.6%
Total	123	100%	93	100%	216	100%

**Table 3 – Numeric and percentage distribution of patients enrolled in the Ostomy Program of CACON and Pam Salgadinho, according to gender and cause of the ostomy (Maceio, 2013).**

Cause	Female		Male		Total	
	n	%	n	%	n	%
Acute abdomen	10	9.2%	17	15.9%	27	12.5%
Anal cancer	3	2.8%	1	0.9%	4	1.9%
Colorectal cancer	53	48.6%	35	32.7%	88	40.7%
Gynecologic cancer	20	18.3%	0	0%	20	9.3%
Carcinomatosis	2	1.8%	0	0%	2	0.9%
Congenital disease	2	1.8%	8	7.5%	10	4.6%
Inflammatory bowel disease	8	7.3%	1	0.9%	9	4.2%
Decubitus ulcer	2	1.8%	0	0%	2	0.9%
Chagasic megacolon	3	2.8%	4	3.7%	7	3.2%
Trauma	4	3.7%	35	32.7%	39	18.1%
Others	2	1.8%	6	5.6%	8	3.7%
Total	109	100%	107	100%	216	100%

whereas in those studies with female predominance, the main cause of ostomy were neoplasms.<sup>4,6,12</sup>

The mean age was 51.3 years. In other studies, the mean age ranged from 39 to 73 years, so that a higher mean age was found in studies with higher prevalence of neoplasia, whereas a lower mean age indicated high prevalence of trauma as cause of the stomas.<sup>4,7,12,14,18,21,22</sup>

It was observed also a mismatch when gender was compared with age of patients. In those aged under 40 years, 73% of patients were male. Mantovani et al.,<sup>23</sup> in a similar study, found 63.9% of males under 45 years; and Violin et al.<sup>14</sup> observed 70% of males under 50 years. This prevalence can be explained by the etiology that implied the ostomy creation as a necessary surgical procedure.

Like most studies,<sup>6,12,14,20,22,23</sup> colorectal cancer was responsible for most of the causes of ostomy, representing 40.7% of cases, mainly located in the rectum, which corresponded to 72.7% of the total and 29.6% of all cases, being also the main cause in women (48.6%) and men (32.7%), with equivalence to trauma cases in men.

Trauma was the second most prevalent cause, with 18.1% of cases, of which 89.4% were male. Similar data were found in a study in Paraná, where 87% of ostomized patients with ostomata due to trauma were male.<sup>23</sup>

Mortality from external causes in a specific population constitutes an excellent indicator to analyze the health situation with respect to accidents and violence. In Alagoas, in 2010, according to figures provided by Computer Department of Sistema Único de Saúde/SUS (DATASUL), 3403 deaths by external causes were recorded; of these, 88.5% were male.

National data are similar to those from the state of Alagoas, with a record of 143,149 deaths from external causes in the same year, with 82.7% occurring in males.<sup>24</sup> These data reflect

the social reality that men, especially young people, experience today, living in a situation of social vulnerability and increased risk of death from accidents. Strengthening the death statistics, we observed that 94.1% of patients between 20 and 29 years were male, as well as 93.5% of those who underwent ostomy due to gunshot penetrating trauma.

Although males were more prevalent than females in the age group under 40 years, 57% of male ostomy patients were older than 40 years; however, the highest concentration of cases for both sexes was the age group of 60–69 years. Of all ostomized women, 84.4% were above 40 years. In another study, although 46.3% of 477 patients were female, this percentage rose to 51.4% for those patients over 45 years.<sup>23</sup> Thus, the data in the literature show a prevalence of older women, as occurred in the present study.

Similar data to those reported by other authors were also found in our study, when it was observed that colostomy (89.45%) prevailed over ileostomy (10.6%) procedures.<sup>2,22</sup> However, although most authors have reported that more permanent versus temporary procedures are performed,<sup>6,12,22</sup> we found a prevalence of 57% of temporary versus 43.0% of permanent ostomies.

## Conclusion

The main reason for carrying out the ostomy was colorectal cancer, and rectal cancer was the type found most frequently. Age group of 60–69 years and females were the most prevalent groups. Trauma – the second leading cause – affected mainly the young male population. Temporary colostomies were the most performed procedures.

In this study, some data that can be used as a basis for strategies to improve health in the group of ostomized patients are presented. Such information could help health professionals to better understand the characteristics of the population, as well as to conduct educational activities in order to improve the quality of life of patients after stoma creation.

### Conflicts of interest

The authors declare no conflicts of interest.

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