

Prevalence and factors associated with incontinence-associated dermatitis in Pediatric Units**

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ABSTRACT

Objective: To estimate the prevalence of and factors associated with the occurrence of incontinence-associated dermatitis (IAD) in children. **Method:** This observational, cross-sectional study used a quantitative approach and electronic medical record data. It included data from patients aged 0 to 14 years who had been hospitalized for at least 24 hours in pediatric units of a tertiary hospital in the state of São Paulo, Brazil, between January 2021 and December 2022. Descriptive analysis and Poisson regression models were used. **Results:** The sample consisted of 297 patients with some type of skin lesion, of whom 31.9% (n=95) had IAD. Significant associations were identified between IAD and age, type of hospitalization, comorbidities, medications acting on the cardiovascular system, systemic anti-infective agents, vitamins, and diaper use. The likelihood of developing IAD was 1.87 times higher among patients with preexisting comorbidities, 3.98 times higher among those receiving anti-infective agents, and 2.79 times higher among those using diapers. **Conclusion:** The prevalence of IAD was 31.9%. Therefore, identifying associated factors is essential for planning preventive strategies aimed at reducing the risk and occurrence of IAD.

KEYWORDS: Dermatitis. Urinary incontinence. Fecal incontinence. Enterostomal therapy. Pediatric nursing.

Prevalência e fatores relacionados à dermatite associada à incontinência em Unidades Pediátricas

RESUMO:

Objetivo: Estimar a prevalência e os fatores relacionados à ocorrência de dermatite associada à incontinência (DAI) em pacientes pediátricos. **Método:** Estudo observacional, transversal, de abordagem quantitativa, com pesquisa em prontuário eletrônico. Incluíram-se dados dos pacientes de 0 a 14 anos completos, internados por, no mínimo, 24 horas, em unidades pediátricas de um hospital terciário no interior de São Paulo, no período de janeiro de 2021 a dezembro de 2022. Utilizou-se análise descritiva e o modelo de regressão de Poisson. **Resultados:** A amostra foi composta por 297 pacientes com algum tipo de lesão de pele, dos quais 31,9% (n=95) eram DAI. Identificaram-se associações entre DAI e idade, tipo de internação, comorbidades, medicamentos que atuam no sistema cardiovascular, anti-infecciosos de uso sistêmico, vitaminas e o uso de fraldas. As chances de desenvolver DAI são 1,87 vezes maiores em pacientes com comorbidades prévias, 3,98 vezes maiores em

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pacientes que utilizam anti-infecciosos e 2,79 vezes maiores naqueles que usam fraldas. **Conclusão:** Evidenciou-se que a prevalência de DAI foi de 31,9%. Portanto, a identificação dos fatores associados é essencial para o planejamento de ações preventivas, minimizando os riscos e a ocorrência de DAI.

DESCRIPTORES: Dermatite. Incontinência urinária. Incontinência fecal. Estomaterapia. Enfermagem pediátrica.

Prevalencia y factores relacionados con la dermatitis asociada a la incontinencia en Unidades Pediátricas

RESUMEN

Objetivo: Estimar la prevalencia y los factores relacionados con la ocurrencia de dermatitis asociada a la incontinencia (DAI) en pacientes pediátricos. **Método:** Estudio observacional y transversal, con enfoque cuantitativo y basado en la revisión de historias clínicas electrónicas. Se incluyeron datos de pacientes de 0 a 14 años cumplidos, hospitalizados durante al menos 24 horas en unidades pediátricas de un hospital terciario del interior del estado de São Paulo, entre enero de 2021 y diciembre de 2022. Se utilizaron análisis descriptivos y el modelo de regresión de Poisson. **Resultados:** La muestra estuvo compuesta por 297 pacientes con algún tipo de lesión cutánea, de los cuales el 31,9% (n=95) presentaban DAI. Se identificaron asociaciones entre la DAI y la edad, el tipo de hospitalización, las comorbilidades, los medicamentos que actúan sobre el sistema cardiovascular, los antiinfecciosos de uso sistémico, las vitaminas y el uso de pañales. La probabilidad de desarrollar DAI fue 1,87 veces mayor en pacientes con comorbilidades previas, 3,98 veces mayor en aquellos que utilizaban antiinfecciosos y 2,79 veces mayor en quienes usaban pañales. **Conclusión:** Se evidenció una prevalencia de DAI del 31,9%. Por lo tanto, la identificación de los factores asociados es fundamental para la planificación de acciones preventivas que minimicen los riesgos y la ocurrencia de DAI.

DESCRIPTORES: Dermatitis. Incontinencia urinaria. Incontinencia fecal. Estomaterapia. Enfermería pediátrica.

INTRODUCTION

Urinary and/or fecal incontinence is characterized by the involuntary loss of excretions resulting from muscular, cognitive, neurological, or medication-related alterations and may represent a significant issue among hospitalized children¹. Regardless of whether children were previously incontinent, clinical severity associated with the need for sedation, bed rest, reduced level of consciousness, and continuous monitoring affects their ability to control and express basic physiological needs, often requiring the use of diapers, even in previously continent patients.

This combination of factors, together with dependence on medical devices and prolonged exposure to moisture, urine, and feces, constitutes an important risk factor for the development of incontinence-associated dermatitis (IAD)^{1,2}, which is characterized as an irritant contact dermatitis resulting from skin inflammation in patients with fecal and/or urinary incontinence³. In the literature, IAD is also referred to as “perineal dermatitis,” “diaper dermatitis,” “diaper rash,” and “moisture-associated skin damage.” However, the term IAD is more accurate because it specifically distinguishes inflammation resulting from contact with urine and/or feces due to incontinence from other skin conditions^{3,4}.

Research indicates IAD results from disruption of the skin barrier function, triggering an inflammatory response¹. This disruption is caused by increased skin pH due to overhydration and exposure to urine and/or feces, making the skin more alkaline^{1,3,5}. This process occurs through the conversion of urea, a urinary metabolite, into ammonia, a substance with a high pH. Consequently, the resulting alkaline environment promotes microbial proliferation, increasing the risk of skin infection^{1,3,5}. In addition to urinary metabolites, feces contain lipolytic and proteolytic enzymes that damage the stratum corneum³. Furthermore, liquid stool contains higher concentrations of digestive enzymes and is therefore more aggressive than formed stool^{1,3}.

Therefore, during hospitalization, whether in pediatric intensive care units (PICU) or pediatric inpatient units, it is believed that risk factors for the development of IAD extend beyond diaper use and may also be associated with the duration and frequency of skin exposure to urine and/or feces, microbial colonization, the use of certain medication classes, and excessive use of soap, ointments, and irritating chemical substances⁵.

IAD affects the perineal, pubic, scrotal, inguinal, vulvar, and labial regions⁶. It is initially characterized by mild asymptomatic erythema and, as it progresses, may present with moderate-to-severe erythema, skin maceration, exudate, and edema, potentially causing pain, burning sensations, or pruritus. The signs and symptoms may worsen according to the frequency and volume of bowel movements^{6,7}. Complications and symptom progression further compromise skin integrity, increasing the risk of infection, as demonstrated in a 2014 study that reported a prevalence of candidiasis in 32% of patients affected by IAD⁸.

In addition, IAD is considered a risk factor for pressure injuries due to increased skin vulnerability³. Although IAD and pressure injuries have distinct etiologies, they may coexist because dermatitis originates at the skin surface, whereas pressure injuries primarily affect underlying soft tissues^{3,4}.

Despite its clinical relevance, the prevalence of IAD remains underinvestigated, largely because of the difficulty in distinguishing Stage I and II pressure injuries from lesions resulting from IAD as well as underreporting within health care services³. This challenge is further compounded by the lack of diagnostic criteria and the absence of internationally standardized methods for terminology and lesion classification. Consequently, prevalence and incidence estimates vary substantially according to context and population, making it difficult to obtain accurate and comparable estimates across health care settings^{3,4}.

To address this issue, the Ghent Global Incontinence Associated Dermatitis Categorisation Tool (GLOBIAD) was developed as an instrument for classifying IAD severity based on visual assessment of affected skin areas⁴. The tool categorizes lesions into Category 1 (1A: persistent erythema without clinical signs of infection; 1B: persistent erythema with clinical signs of infection) and Category 2 (2A: skin loss without clinical signs of infection; 2B: skin loss with clinical signs of infection). By providing an internationally standardized description of IAD, GLOBIAD may facilitate more accurate determination of IAD prevalence and incidence⁴.

A study conducted in 2022 reported that the prevalence of IAD among children in the United States ranges from 25% to 50%, with the highest frequency occurring between 9 and 12 months of age, emphasizing that most children will experience IAD at least once during their lifetime⁹. These rates may appear particularly high among hospitalized children, given that maintaining skin integrity in children is challenging because incontinence is physiologically expected in younger children and is also common during episodes of clinical instability^{3,5}. Furthermore, when not prevented, identified, and treated appropriately, IAD negatively affects patient outcomes by prolonging hospital stays, delaying treatment responses, increasing the risk of infection, and causing considerable discomfort¹⁰.

Within this context, nurses play a crucial role in the prevention, early identification, and management of skin lesions in hospitalized patients. Through systematic assessment of skin integrity, daily skin inspection, and the use of risk assessment instruments, nurses can identify skin alterations early and implement timely interventions. These actions may contribute to improved clinical outcomes during hospitalization, enhanced patient safety, and reduced health care costs associated with skin lesions^{6,7,10}.

Despite the importance of this topic, the scientific literature remains limited regarding IAD in children, revealing important gaps in knowledge concerning its incidence, prevalence, and associated factors^{2,5,6,9-13}. Moreover, most available evidence has been generated in adult populations, limiting its applicability to pediatric settings, as children possess distinct skin and physiological characteristics that may influence both the occurrence and progression of skin lesions^{2,6}.

Accordingly, conducting studies on IAD in pediatric hospital settings is essential to expand scientific knowledge regarding risk factors, prevention strategies, and lesion management. The generation of evidence may also support the development and validation of assessment instruments and clinical protocols specifically designed for pediatric populations, thereby contributing to the early identification of lesions, implementation of preventive measures, and appropriate skin care^{2,6,7}.

Therefore, IAD represents a highly relevant issue for nurses, as it is a common condition encountered in pediatric clinical practice^{1,5}. The study hypothesis was that IAD has a high prevalence among children and is associated with both patient-related characteristics and treatment-related factors.

OBJECTIVES

To estimate the prevalence of and factors associated with the occurrence of IAD among children admitted to pediatric inpatient units and the PICU.

METHODS

This was an observational, cross-sectional study with a quantitative approach based on documentary research using electronic patient medical records. The study was conducted and reported in accordance with the STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) guidelines. The research was conducted at a high-complexity hospital in the state of São Paulo, Brazil.

The study included all medical records of children aged 29 days to 14 years who were admitted to the pediatric ward or PICU for at least 24 hours between January 2021 and December 2022. Records lacking sufficient information to identify IAD, such as inadequate descriptions of lesion characteristics, were excluded.

Data were collected from anonymized administrative reports provided by the hospital's department of medical informatics between September 2023 and January 2024. To assess the quality of patient care and facilitate systematic reporting of adverse events, the institution had implemented the daily use of the "Quality of Care" instrument, completed electronically by the unit nurse. Notably, the system allows differentiation between pressure injuries and other skin lesions, contributing to greater diagnostic accuracy.

The instrument enables adverse event reporting through a checklist and includes the identification of skin lesions. Therefore, all records containing a positive notification for a skin lesion were selected, and the corresponding electronic medical records were subsequently reviewed to identify cases of IAD.

IAD was defined as skin lesions whose descriptions contained sufficient information regarding the presence of urinary and/or fecal incontinence, with skin damage originating in the perianal region and potentially extending to the perineum, pubic area, scrotum, groin, vulva, and labia majora. After identification, lesions were categorized according to the GLO-BIAD based on available data⁷.

The outcome variable was the presence of IAD. Predictor variables included biological sex (male/female), age (years), length of hospital stay (days), weight (kilograms), type of admission (medical/surgical), preexisting comorbidities (yes/no), medications classified according to the Anatomical Therapeutic Chemical system, which groups medications into 14 categories: alimentary tract and metabolism; blood and blood-forming organs; cardiovascular system; dermatologicals; genitourinary system and sex hormones; systemic hormonal preparations excluding sex hormones and insulins; systemic anti-infective agents; antineoplastic and immunomodulating agents; musculoskeletal system; nervous system; antiparasitic products, insecticides and repellents; respiratory system; sensory organs; and various. The presence or absence of venous devices (yes/no), ventilatory support (yes/no), nasogastric or nasoenteric tubes (NGT/NET) (yes/no), indwelling urinary catheters (yes/no), ostomies (yes/no), and diaper use (yes/no) were also evaluated.

Sample size was calculated assuming an IAD prevalence of 25%^{5,7}, simple random sampling, Type I and Type II errors of 0.05 and 0.20, respectively, resulting in a minimum sample size of 288 medical records. To ensure an adequate sample size, 323 records were initially included, of which 26 were excluded because of incomplete data. The final sample was composed by 297 records.

Medical records were systematically reviewed by the study investigators. Data collection was performed using a structured questionnaire previously developed and tested by the authors, including the outcome of interest and all predictor

variables under investigation. The instrument was made available through the Research Electronic Data Capture (REDCap — <https://www.project-redcap.org/>) platform, which was used to record and store the collected information, ensuring standardization and organization of data.

After data collection was completed, the information was exported from REDCap and transcribed with double verification into a Microsoft Excel 2016 spreadsheet, which served as the database for analysis.

Descriptive data were presented using absolute and relative frequency distributions. Associations between the dependent variable and predictors were assessed using Poisson regression models, and prevalence ratios (PRs) with 95% confidence intervals (95%CI) were calculated. Statistical significance was set at 5% ($p=0.05$), and analyses were performed using *Statistical Package for the Social Sciences – SPSS Statistics 20 para Windows*.

Numerical variables were assessed for normality using the Shapiro-Wilk test. In the bivariate analysis, the chi-square test and Fisher's exact test were used for categorical variables, whereas Student's t test was applied to continuous variables. Variables with $p \leq 0.05$ in the bivariate analysis were included in the multivariable analysis, which was conducted using Poisson regression with robust variance. Statistical significance was set at 5%.

The study was approved by a research ethics committee under opinion no. 6,126,819 and CAAE no. 69749323.0.0000.5411 and complied with the ethical standards for research with human beings established by Resolution No. 466/2012 of the Brazilian National Health Council.

RESULTS

Between January 2021 and December 2022, a total of 4,798 admissions were recorded in the pediatric units of the study institution. Review of the hospitalization records identified 693 (14.4%) notifications of skin lesions. Considering the previously established sample size calculation (288 medical records), 323 records with a documented skin lesion were initially selected. After applying the inclusion and exclusion criteria and assessing data completeness, 26 records were excluded, resulting in a final sample of 297 medical records.

The sample was predominantly composed of male patients ($n=165$), admitted for medical conditions and presenting at least one comorbidity ($n=189$). The prevalence of IAD was 31.9% ($n=95$).

Regarding the characteristics of children who developed IAD, most patients had a mean age of 1.63 years, were admitted for medical conditions ($n=90$), and had a high prevalence of preexisting comorbidities ($n=75$) (Table 1).

Table 1. Bivariate associations between children with IAD according to sociodemographic and clinical characteristics ($n=297$). Botucatu (SP), Brazil, 2026.

Variables	IAD		p-value*
	No (n=202)	Yes (n=95)	
	n (%)	n (%)	
Sociodemographic			
Male sex	116 (57.4)	49 (51.6)	0.344
Female sex	86 (42.6)	46 (48.4)	
Age (years)	5.79 (5.12) [†]	1.63 (3.14) [†]	<0.001 [‡]
Clinical			
Surgical admission	35 (17.3)	5 (5.3)	0.005
Medical admission	167 (82.7)	90 (94.7)	
Length of hospital stay	13.73 (14.15) [†]	34.72 (63.76) [†]	<0.001 [‡]
Weight (kg)	25.68 (20.91) [†]	11.08 (11.43) [†]	<0.001 [‡]
Preexisting comorbidities	114 (56.4)	75 (78.9)	0.001*

IAD: incontinence-associated dermatitis.

*p-value obtained using Pearson's chi-square test; [†]mean (standard deviation); [‡]Student t test. Statistical significance level: $p < 0.05$.

Source: Prepared by the authors.

The most frequently used medications were systemic anti-infective agents (n=91) and medications acting on the nervous system (n=89). Regarding medical devices, 93.7% (n=89) of patients with IAD used some type of venous device during hospitalization, and 95.8% (n=91) used diapers (Table 2).

In the multivariable analysis, each additional year of age was associated with a 17% reduction in the prevalence of IAD. Regarding clinical conditions, admission for surgical conditions reduced the prevalence of IAD by 67% compared with admission for medical conditions, whereas the presence of one or more preexisting comorbidities was associated with a 1.87-fold increase in IAD prevalence (Table 3).

With respect to medication use, systemic anti-infective agents were associated with a 3.98-fold increase in the prevalence of IAD. Medications acting on the cardiovascular system were associated with a 1.37-fold increase, whereas vitamin use was associated with a 1.36-fold increase in IAD prevalence. Among the medical devices evaluated, only diaper use showed a positive association with IAD, with a PR of 2.79 (Table 3).

Less severe forms of IAD, which were classified using GLOBIAD, were the most prevalent (Table 4).

DISCUSSION

The prevalence of IAD identified in this study was 31.9%, which is consistent with the rates reported in prior research, ranging from 25% to 50% depending on age⁹. However, evidence describing the prevalence and incidence of IAD in children remains limited, which underscores the importance of the current study.

Among the factors associated with IAD prevalence during pediatric hospitalization, significant associations were identified with age, type of admission, presence of comorbidities, use of medications acting on the cardiovascular system, systemic anti-infective agents, vitamin supplementation, and diaper use.

Table 2. Bivariate associations between children with IAD according to medications and medical devices used during hospitalization (n=297). Botucatu (SP), Brazil, 2026.

Variables	IAD		p-value*
	No (n=202)	Yes (n=95)	
	n (%)	n (%)	
Medications			
Systemic anti-infective	152 (75.2)	91 (95.8)	<0.001
Musculoskeletal system	70 (34.7)	26 (27.4)	0.211
Respiratory system	18 (8.9)	2 (2.1)	0.029
Antineoplastic and immunomodulating agents	15 (7.4)	4 (4.2)	0.291
Nervous system	158 (78.2)	89 (93.7)	0.001
Vitamins	34 (16.8)	36 (37.9)	<0.001
Systemic hormonal preparations	11 (5.4)	5 (5.3)	0.948
Cardiovascular system	29 (14.4)	59 (62.1)	<0.001
Alimentary tract and metabolism	14 (6.9)	13 (13.7)	0.059
Medical devices			
Venous devices	195 (96.5)	89 (93.7)	0.361 [†]
Ventilatory support	55 (27.2)	41 (43.2)	0.006
NGT/NET	67 (33.2)	63 (66.3)	<0.001
IUC	68 (33.7)	39 (41.1)	0.216
Ostomy	18 (8.9)	12 (12.6)	0.321
Diaper use	125 (61.9)	91 (95.8)	<0.001

IAD: incontinence-associated dermatitis; IUC: indwelling urinary catheter; NET: nasoenteric tube; NGT: nasogastric tube.

*p-value obtained using Pearson's chi-square test; [†]Fisher's exact test. Statistical significance level: p<0.05.

Source: Prepared by the authors.

The mean age of patients with IAD was 1.63 years (± 3.14 years), significantly lower than the mean age of patients presenting with other types of skin lesions, which was 5.79 years (± 5.12 years). Younger children are known to be more susceptible to skin lesions because of skin immaturity⁹. Studies have shown that children have a thinner epidermis than adults and more alkaline skin, with pH levels ranging from 6.34 to 7.5 depending on the anatomical site⁹.

Consistent with these findings, the present study demonstrated that each additional year of age reduced the prevalence of IAD by 17%, emphasizing the need for increased attention to skin care in younger children^{11,12}. The higher risk among younger children may also be associated with prolonged diaper use and the lack of sphincter control characteristic of early childhood development^{11,12}. These factors increase skin exposure to excretions and consequently increase susceptibility to IAD¹³.

The present study confirmed diaper use as a positive predictor of IAD development, demonstrating that diaper use increased the prevalence of IAD by 2.79-fold among hospitalized children¹⁴. Diapers increase skin temperature and, when not changed regularly, retain moisture, thereby altering the skin microclimate. Under these conditions, the skin barrier becomes compromised, favoring the development of IAD^{11,12}.

Prior research indicates that length of hospital stay is directly related to patient clinical severity and the urgent nature of most admissions in which IAD develops. During episodes of clinical instability, patients often experience restricted mobility and prolonged diaper use^{11,12}. Evidence suggests that hospitalizations lasting more than 15 days constitute a risk factor for the development of skin lesions, particularly IAD, and increase the likelihood of secondary infections¹⁵, although this association was not confirmed in the present study.

Table 3. Multivariable analysis of children with incontinence-associated dermatitis according to sociodemographic and clinical characteristics, medications, and medical devices used during hospitalization (n=297). Botucatu (SP), Brazil, 2026.

Variables	PR	95%CI	p-value*
Sociodemographic			
Age (years)	0.83	0.74–0.94	0.004
Clinical			
Surgical admission	0.33	0.16–0.67	0.002
Preexisting comorbidities	1.87	1.26–2.77	0.002
Medications			
Systemic anti-infective	3.98	1.59–9.99	0.003
Respiratory system	0.58	0.27–1.27	0.177
Nervous system	1.55	0.69–3.45	0.285
Vitamins	1.36	1.01–1.81	0.040
Cardiovascular system	1.37	1.02–1.85	0.036
Medical devices			
Ventilatory support	0.87	0.63–1.20	0.383
NGT/NET	1.11	0.78–1.59	0.558
Diaper use	2.79	1.01–7.76	0.049

95%CI: 95% confidence interval; NET: nasoenteric tube; NGT: nasogastric tube; PR: prevalence ratio.

*Value obtained using a Poisson regression model with robust variance. Statistical significance level: $p < 0.05$.

Source: Prepared by the authors.

Table 4. Distribution of incontinence-associated dermatitis lesions according to the Ghent Global Incontinence Associated Dermatitis Categorisation Tool. Botucatu (SP), Brazil, 2026.

Categories	n	%
1A: Persistent erythema without clinical signs of infection	55	57.9
1B: Persistent erythema with clinical signs of infection	16	16.5
2A: Skin loss without clinical signs of infection	15	15.7
2B: Skin loss with clinical signs of infection	9	9.4

Source: Prepared by the authors.

With regard to comorbidities, 78.9% of the sample had at least one preexisting condition, a factor associated with a 1.87-fold increase in IAD prevalence. Research indicates these patients frequently require prolonged and recurrent hospitalizations, as well as continuous medication use, which, combined with underlying clinical conditions, may lead to alterations in pH and/or intestinal microbiota balance, favoring the development of IAD. Such medications include systemic anti-infective agents, vitamin supplements, drugs acting on the alimentary tract and metabolism, and cardiovascular medications^{15,16}.

Another important factor associated with IAD was the use of systemic anti-infective agents ($p=0.003$). A total of 95.8% of patients who developed IAD received at least one antibiotic during hospitalization¹⁷. Importantly, this finding does not imply that such medications directly cause IAD; rather, their adverse effects may contribute to conditions that predispose patients to the development of this dermatitis.

Studies have shown that prolonged antimicrobial use, particularly when combined with other medications, may alter the intestinal microbiota and lead to episodes of diarrhea, increasing skin exposure to feces and altering epithelial tissue pH^{5,15,17}. This disruption of the skin's natural microclimate activates specific enzymes that degrade epithelial proteins, making the area more susceptible to epidermal and dermal erosion, thereby contributing to the development of IAD^{5,15}.

Although previous studies have reported an association between systemic anti-infective use and increased risk of IAD, this finding should be interpreted with caution. The anti-infective category also includes antifungal agents, which are frequently prescribed for fungal infections, particularly those caused by *Candida* spp., a common condition in moist skin areas. Consequently, antifungal use may, in some cases, represent a consequence rather than a cause of IAD, reflecting the treatment of secondary candidiasis associated with the lesion. Therefore, the observed association between anti-infective use and IAD may reflect the clinical complexity of these patients and the therapeutic interventions required as a result of the dermatitis itself^{16,18}.

Other medications associated with IAD occurrence included cardiovascular drugs and vitamins. Cardiovascular medications may cause adverse effects such as diarrhea, changes in stool pH, nausea, and vomiting, while vitamins may produce similar effects, particularly when administered in combination with other drugs^{19,20}. Furthermore, the use of these medications may also reflect greater clinical severity, as critically ill patients typically receive more pharmacological therapies, which may contribute to the development of IAD, as previously discussed^{11,12}.

The use of indwelling urinary catheters was not significantly associated with IAD prevalence, a finding that is consistent with prior research. Catheterization may act as a protective factor because urine is collected within a closed system, thereby preventing prolonged moisture exposure and urine contact with the skin. In a study conducted among adults in intensive care units, only 8.7% of patients using indwelling urinary catheters developed IAD, whereas 91.3% remained free of dermatitis²¹.

Regarding lesion classification according to GLOBIAD, most cases were classified as Category 1A, followed by Category 1B. These findings are consistent with previous studies reporting similar distributions²². This pattern may be explained by the fact that Category 1A, characterized by erythema without clinical signs of infection, commonly represents the initial manifestation of IAD^{22,23}. The remaining categories (1B, 2A, and 2B) are generally less prevalent because preventive and treatment measures help reduce skin loss and infection^{22,23}.

Although not a primary objective of this study, it is important to emphasize that nursing professionals' knowledge is essential for the identification of IAD and the implementation of appropriate management strategies²⁴. Thorough skin assessment, preventive measures, appropriate hygiene practices, and adequate treatment are fundamental components of skin care for patients with incontinence^{24,25}.

Studies have demonstrated substantial knowledge gaps regarding IAD among nursing staff. Difficulty differentiating IAD from pressure injuries, for example, remains common despite the distinct management approaches required for each condition^{24,25}. Therefore, the importance of continuing education initiatives within health care institutions should be emphasized, including courses, training programs, and educational activities focused on IAD, given its high prevalence among children^{24,25}. Early identification of IAD and its associated risk factors is fundamental for preventing skin damage and ensuring effective management of this condition^{24,25}.

Study limitations

This study has some limitations. First, the research was conducted at a single hospital center, which limits the generalizability of the findings to other health care settings and contexts. In addition, because data collection was based on information recorded in electronic medical records, data are subject to underreporting and inaccurate descriptions of skin lesions. Nevertheless, these limitations do not compromise the findings presented herein, as important information was identified regarding the prevalence of and potential factors predisposing children to the development of IAD.

Recommendations

Multicenter prospective studies with standardized data collection are recommended to enhance the external validity of the findings and minimize biases related to underreporting and inaccuracies in clinical records. In clinical practice, the standardization of assessments through validated instruments is recommended, as this may contribute to more accurate documentation of skin lesions in electronic medical records, as well as support the ongoing training of health professionals in the early identification and appropriate management of IAD. Furthermore, institutional strategies aimed at improving documentation systems and monitoring quality indicators may contribute to enhancing patient care and preventing complications associated with IAD.

CONCLUSION

A prevalence of 31.9% of IAD was identified among pediatric hospitalizations, demonstrating that the occurrence of this condition was substantial. Therefore, investing efforts in preventing the development of this type of lesion is essential for patient safety, given that its occurrence represents an important indicator of health care quality.

The occurrence of IAD was associated with younger age, type of admission, preexisting comorbidities, medications acting on the cardiovascular system, systemic anti-infective agents, vitamin use, and diaper use. Therefore, identifying associated factors is essential for planning preventive interventions aimed at minimizing risks and reducing the prevalence of IAD.

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