

# Risk factors and topical management of incontinence-associated dermatitis in pediatric patients: a cross-sectional study\*\*

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## ABSTRACT

**Objective:** To identify the clinical, demographic, and institutional factors associated with the severity of incontinence-associated dermatitis in neonatal and pediatric patients. **Method:** This was an observational, cross-sectional, analytical, and retrospective study based on the documentary analysis of medical records and nursing records. Data were collected from January 2023 to the first half of 2025 at a university hospital in Brazil. Hospitalized patients aged 0–14 years diagnosed with incontinence-associated dermatitis were included. Data collection was conducted from August to October 2025 and included sociodemographic and clinical information, lesion severity classification, and the therapeutic interventions adopted. Data were analyzed using descriptive statistics and bivariate tests. **Results:** A total of 100 medical records were analyzed, with lesions involving loss of skin integrity being the most frequently diagnosed. Younger patients, those with complex comorbidities, and those admitted to higher-complexity care units were more frequently represented. Moreover, the greater the severity of the lesion, the greater the need for more specific treatment. **Conclusion:** The findings demonstrate the high vulnerability of the pediatric population to incontinence-associated dermatitis and reinforce the importance of continuous training of the nursing team to promote early identification and appropriate management, thereby enhancing patient safety and quality of care.

**DESCRIPTORS:** Diaper Rash. Urinary Incontinence. Fecal Incontinence. Enterostomal Therapy. Child Health.

## Fatores de risco e manejo tópico de dermatite associada à incontinência em pediatria: estudo transversal\*\*

## RESUMO

**Objetivo:** Identificar fatores clínicos, demográficos e institucionais associados à gravidade da dermatite associada à incontinência em pacientes neonatais e pediátricos. **Método:** Estudo observacional, transversal, analítico e retrospectivo baseado na análise documental de prontuários e registros de enfermagem. O levantamento deu-se no período de janeiro de 2023 até o primeiro semestre de 2025 em um hospital universitário do Brasil. Foram incluídos pacientes hospitalizados, de 0 e 14 anos, diagnosticados com dermatite

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associada à incontinência. Os dados foram coletados de agosto a outubro de 2025 e incluíram informações sociodemográficas, clínicas, classificação da gravidade das lesões e condutas terapêuticas adotadas, e analisados por estatística descritiva e testes bivariados. **Resultados:** Foram analisados 100 prontuários, nos quais as lesões com perda de integridade cutânea foram mais diagnosticadas. Pacientes de menor faixa etária ou com comorbidades complexas ou ainda internados em unidades de mais alta complexidade assistencial foram os mais predominantes. Sobretudo, quanto mais grave a lesão, maior foi a necessidade de um tratamento mais específico. **Conclusão:** Os achados mostraram a elevada vulnerabilidade da população pediátrica à dermatite associada à incontinência e reforçam a importância da capacitação contínua da equipe de enfermagem para a identificação precoce e o manejo adequado, promovendo segurança e a qualificação da assistência.

**DESCRIPTORES:** Dermatite das fraldas. Incontinência urinária. Incontinência fecal. Estomaterapia. Saúde da criança.

## Factores de riesgo y manejo tópico de la dermatitis asociada a la incontinencia en pacientes pediátricos: estudio transversal\*\*

### RESUMEN

**Objetivo:** Identificar factores clínicos, demográficos e institucionales asociados a la gravedad de la dermatitis asociada a la incontinencia en pacientes neonatales y pediátricos. **Método:** Estudio observacional, transversal, analítico y retrospectivo basado en el análisis documental de historias clínicas y registros de enfermería. La revisión de los registros abarcó el período comprendido entre enero de 2023 y el primer semestre de 2025 en un hospital universitario de Brasil. Se incluyeron pacientes hospitalizados de 0 a 14 años diagnosticados con dermatitis asociada a la incontinencia. Los datos se recopilaron entre agosto y octubre de 2025 e incluyeron información sociodemográfica y clínica, la clasificación de la gravedad de las lesiones y las medidas terapéuticas adoptadas; se analizaron mediante estadística descriptiva y pruebas bivariadas. **Resultados:** Se analizaron 100 historias clínicas, en las que se diagnosticaron con mayor frecuencia lesiones con pérdida de la integridad cutánea. Predominaron los pacientes de menor edad, aquellos con comorbilidades complejas y los ingresados en unidades de mayor complejidad asistencial. En particular, cuanto mayor era la gravedad de la lesión, mayor era la necesidad de un tratamiento más específico. **Conclusión:** Los hallazgos muestran la elevada vulnerabilidad de la población pediátrica frente a la dermatitis asociada a la incontinencia y refuerzan la importancia de la capacitación continua del equipo de enfermería para la identificación precoz y el manejo adecuado, contribuyendo a la seguridad y a la mejora de la calidad de la atención.

**DESCRIPTORES:** Dermatitis del pañal. Incontinencia urinaria. Incontinencia fecal. Estomaterapia. Salud infantil.

## INTRODUCTION

Incontinence-associated dermatitis (IAD) is a common condition in pediatrics, characterized by skin lesions located in the perineal, perigenital, or perianal regions resulting from prolonged skin exposure to urine and feces. It manifests as inflammation, erythema, blisters, pustules, erosions, and secondary infections, constituting an irritant contact dermatitis observed in patients with fecal and/or urinary incontinence. In children, it is commonly referred to as diaper dermatitis or diaper rash<sup>(7,13)</sup>.

In preterm newborns, the skin is more fragile due to the thin stratum corneum, reduced cohesion between the epidermis and dermis, and skin barrier immaturity. These characteristics promote increased transepidermal water loss, absorption of chemical agents, and susceptibility to skin injury. The more neutral skin pH in this population, compared with that of adults and adolescents, reduces protection against microbial proliferation. Consequently, the skin of neonates, infants, and young children is particularly susceptible to contact with glandular secretions, mites, bacteria, feces, urine, and the occlusive effect of diaper materials<sup>(6)</sup>.

The pathophysiology of IAD involves prolonged skin exposure to irritants (urea, ammonia, and digestive enzymes), combined with moisture, friction, and microbial colonization. Alterations in skin pH resulting from this exposure impair the epidermal barrier, leading to inflammation and maceration while also promoting the activity of bacteria that convert urea into ammonia, thereby increasing the risk of infection. In neonates, frequent urination and diaper occlusion make IAD particularly prevalent. In older children, episodes such as gastroenteritis, which increase the frequency of bowel movements, also increase this risk. In severe cases of IAD, fungal infections may also occur<sup>(13,9)</sup>.

Recent evidence reinforces the clinical relevance of IAD in the pediatric population. A prospective study conducted by Nicolosi *et al.* (2025), involving 102 infants, found that 78.4% of moisture-associated skin lesions were classified as IAD, highlighting its substantial representation among skin lesions in this age group. These findings not only demonstrate the magnitude of the problem in pediatric and neonatal populations but also underscore the need for healthcare professionals to deepen their understanding of the factors associated with IAD in order to develop systematic prevention and management strategies within the hospital setting.

This study is justified by the need to identify pediatric patients at risk of developing IAD during hospitalization, thereby supporting preventive interventions, improving the quality of nursing care, and contributing to the development of clinical protocols. In addition, it seeks to address the lack of epidemiological studies investigating the association between clinical and demographic factors and the severity of IAD in the pediatric population.

This study aimed to identify the clinical, demographic, and institutional factors associated with greater severity of IAD in neonatal and pediatric patients.

## METHOD

### Study Design

This was an observational, cross-sectional, analytical, and retrospective study with a quantitative approach, conducted in accordance with STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) guidelines<sup>(12)</sup>.

### Data collection Setting

The study was conducted at a large public tertiary-care university hospital located in southern Brazil. The hospital has a specialized dermatology nursing service, the skin care team (SCT), which is responsible for the clinical assessment, prescription, and therapeutic monitoring of patients with skin lesions.

In addition to maintaining systematic electronic spreadsheets and recording notifications in the institutional pressure injury (PI) reporting system, the SCT provides continuing education on skin care and coordinates institutional indicators related to this area.

### Period

Data collection was conducted between August and October 2025.

### Selection Criteria

Electronic medical records and nursing records from January 2023 through the first half of 2025 were eligible for inclusion. The records corresponded to hospitalized pediatric patients younger than 14 years of age with a diagnosis of IAD documented by the SCT during hospitalization. Records containing incomplete or inconsistent information that precluded the adequate extraction of the variables of interest were excluded.

## Data Collection

Data regarding sociodemographic characteristics (age and sex), clinical characteristics (primary medical diagnosis at hospitalization and presence of comorbidities), and institutional characteristics (hospital unit) were extracted from the electronic medical records and constituted the study independent variables. The dependent variable was the severity of IAD.

## Data Processing and Analysis

Statistical analysis included descriptive statistics, with the calculation of absolute and relative frequencies to characterize the sample and study variables. Associations between categorical variables were assessed using bivariate analysis with the chi-square test, adopting a significance level of 0.05 (5%) ( $p < 0.05$ ).

## Ethical Aspects

Artificial intelligence tools, namely ChatGPT (OpenAI, GPT-5 version) and Gemini (Google), were used to support language refinement, including spelling and grammatical correction and improvement of the clarity and formality of the manuscript. The scientific content, data analysis, and interpretation are entirely the responsibility of the authors and were reviewed at all stages. These AI tools were used solely for language editing and not for scientific content.

The study was approved by the Research Ethics Committee involving Human Beings of *Universidade Federal do Paraná* under Opinion 7,882,166. Access to the information was contingent upon participants signing the Informed Consent Form and providing authorization for data collection. Participants were informed that they could withdraw from the study at any stage of the research. The study complied with the ethical principles established in Resolution 466/2012 of the Brazilian National Health Council.

## RESULTS

For the organization and analysis of the variables, the therapeutic interventions were grouped as follows: basic protective barrier, consisting of barrier cream, zinc oxide, Cavilon®, essential fatty acids, and dexpanthenol (trade name: Bepantol®); advanced protective barrier or wound-healing treatment, including hydrocolloid powder, andiroba oil (trade name: Tegum®), *barbatimão* extract (trade name: Fitoscar®), and non-adherent dressing; and antifungal or antibacterial treatment, consisting of nystatin and miconazole cream.

Age groups were classified as follows: neonates (younger than 28 days), infants (29 days to 1 year), preschool children (older than 1 year to 5 years), school-aged children (up to 10 years), and adolescents (up to 14 years), adapted from the classification most commonly used by the Brazilian Ministry of Health and the Brazilian Society of Pediatrics.

Current medical diagnoses were grouped into infections or sepsis, respiratory disorders, gastrointestinal and nutritional disorders, acute manifestations of complex and chronic diseases, and metabolic disorders. Preexisting comorbidities were classified as genetic syndromes and congenital malformations, neurological and developmental conditions, prematurity and perinatal complications, and oncohematological and immunological diseases.

In this study, 100 records of IAD-related consultations were analyzed. In addition, some patients underwent multiple assessments during the same hospitalization, allowing variations in IAD severity classification to be documented, highlighting the dynamic and potentially fluctuating nature of the clinical condition.

The sample consisted of 100 consultations, with infants representing the largest group (38 individuals). This was followed by 26 neonates, 17 preschool children, 12 school-aged children, and seven adolescents.

Mixed cases were defined as those in which more than one severity classification was identified within the same diagnosis because of the possible progression of lesions in different anatomical regions of the same patient.

Table 1 presents the distribution of IAD severity according to the age groups of the sample, expressed as absolute

numbers and corresponding percentages calculated based on the statistical analysis. Percentages were calculated according to the total number of cases within each age group, allowing proportional visualization of the different severity classifications.

The analysis of the association between IAD severity and age groups demonstrated a statistically significant difference ( $p=0.01$ ), indicating an association between the variables analyzed.

Classification 2A predominated across all age groups assessed, with the highest frequency observed among infants, neonates, and school-aged children.

Table 2 presents the distribution of skin lesion severity according to the ward, expressed in absolute numbers and percentages, calculated based on the total number of cases in each ward. It is noteworthy that the analysis of the association between the ward and the severity of skin damage showed a statistically significant result, with a  $p$ -value of 0.04, indicating a strong correlation between these two variables.

In the pediatric surgical ward, where patients admitted are primarily in the preoperative or postoperative period, classification 2A was the most frequent (38.1%), followed by classifications 1A, 1B, 2B, and mixed cases. In the pediatric ward, where most patients presented with clinical conditions, such as oncohematological diseases, classification 2A was also the most frequent, accounting for half of the cases in the unit (50%), followed by classifications 1A and 2B, with no cases classified as 1B or mixed.

In the pediatric inpatient ward, where most patients were admitted through the pediatric emergency department, several cases were classified as 1A and 1B, both accounting for the same proportion (25%), together with classification 2B (50%). No cases were classified as 2A or mixed.

In the Neonatal Intensive Care Unit (ICU), classification 2A predominated, accounting for most cases in the unit, followed by classifications 1A, 2B, and 1B. In the Pediatric ICU, classification 2A was also the most frequent, followed by classifications 1A, 1B, and 2B, with no mixed cases observed.

**Table 1.** Sample profile: age groups and severity of incontinence-associated dermatitis, presented as absolute numbers and percentages. Curitiba, PR, Brazil, 2025 ( $p=0.01$ )

| Hospital unit                 | Severity of incontinence-associated dermatitis in absolute numbers and percentages |           |            |           |          |
|-------------------------------|------------------------------------------------------------------------------------|-----------|------------|-----------|----------|
|                               | 1A                                                                                 | 1B        | 2A         | 2B        | Mixed    |
| Pediatric surgical clinic     | 7 (33.3%)                                                                          | 3 (14.3%) | 8 (38.1%)  | 2 (9.5%)  | 1 (4.8%) |
| Pediatric clinic              | 3 (30.0%)                                                                          | 0 (0%)    | 5 (50.0%)  | 2 (20.0%) | 0 (0%)   |
| Pediatric ward                | 1 (25.0%)                                                                          | 1 (25.0%) | 0 (0%)     | 2 (50.0%) | 0 (0%)   |
| Neonatal Intensive Care Unit  | 9 (24.3%)                                                                          | 1 (2.7%)  | 24 (64.9%) | 3 (8.1%)  | 0 (0%)   |
| Pediatric Intensive Care Unit | 3 (21.4)                                                                           | 2 (14.3%) | 8 (57.1%)  | 1 (7.1%)  | 0 (0%)   |
| Bone marrow transplantation   | 3 (25%)                                                                            | 1 (8.3%)  | 7 (58.3%)  | 0 (0%)    | 1 (8.3%) |

IAD: incontinence-associated dermatitis. **Category 1:** Persistent redness. **Category 2:** Skin loss.

**1A:** Persistent redness without clinical signs of infection; **1B:** Persistent redness with clinical signs of infection; **2A:** Skin loss without clinical signs of infection; **2B:** Skin loss with clinical signs of infection. **Mixed:** lesion with more than one severity level.

Source: Research data, 2025.

**Table 2.** Hospital unit and severity of skin damage, presented as percentages. Curitiba, PR, Brazil, 2025 ( $p=0.04$ )

| Hospital unit                 | Severity of incontinence-associated dermatitis in absolute numbers and percentages |           |            |           |          |
|-------------------------------|------------------------------------------------------------------------------------|-----------|------------|-----------|----------|
|                               | 1A                                                                                 | 1B        | 2A         | 2B        | Mixed    |
| Pediatric surgical clinic     | 7 (33.3%)                                                                          | 3 (14.3%) | 8 (38.1%)  | 2 (9.5%)  | 1 (4.8%) |
| Pediatric clinic              | 3 (30.0%)                                                                          | 0 (0%)    | 5 (50.0%)  | 2 (20.0%) | 0 (0%)   |
| Pediatric ward                | 1 (25.0%)                                                                          | 1 (25.0%) | 0 (0%)     | 2 (50.0%) | 0 (0%)   |
| Neonatal Intensive Care Unit  | 9 (24.3%)                                                                          | 1 (2.7%)  | 24 (64.9%) | 3 (8.1%)  | 0 (0%)   |
| Pediatric Intensive Care Unit | 3 (21.4)                                                                           | 2 (14.3%) | 8 (57.1%)  | 1 (7.1%)  | 0 (0%)   |
| Bone marrow transplantation   | 3 (25%)                                                                            | 1 (8.3%)  | 7 (58.3%)  | 0 (0%)    | 1 (8.3%) |

ICU: intensive care unit; BMT: bone marrow transplantation.

Source: Research data, 2025.

In the Bone Marrow Transplantation (BMT) Unit, classification 2A predominated, followed by classifications 1A and 1B, with one mixed case and no cases classified as 2B.

Table 3 presents the distribution of IAD severity according to sex, expressed as absolute numbers and percentages.

Among females, classification 2A was the most common, with 28 cases, representing 57.1% of the total. Among males, classification 2A also predominated, with 24 cases (47.1%).

The analysis of the association between sex and IAD severity demonstrated a statistically significant result ( $p=0.003$ ), indicating an association between these variables.

**Table 3.** Association between sex and severity of incontinence-associated dermatitis, presented as percentages. Curitiba, PR, Brazil, 2025 ( $p=0.003$ )

| Sex    | Severity of incontinence-associated dermatitis |           |            |           |          |
|--------|------------------------------------------------|-----------|------------|-----------|----------|
|        | 1A                                             | 1B        | 2A         | 2B        | Mixed    |
| Female | 11 (22.4%)                                     | 7 (14.3%) | 28 (57.1%) | 3 (6.1%)  | 0 (0%)   |
| Male   | 16 (31.4%)                                     | 2 (3.9%)  | 24 (47.1)  | 7 (13.7%) | 2 (4.0%) |

Source: Research data, 2025.

## DISCUSSION

### Clinical profile, severity, and factors associated with incontinence-associated dermatitis in pediatric patients

The results of this study demonstrated a high concentration of IAD cases among infants and neonates, who accounted for 64% of the cases analyzed. This finding reflects the greater vulnerability of these age groups, which is related to skin barrier immaturity, whose functionality depends directly on the degree of maturation of the stratum corneum, particularly in preterm and full-term newborns. The predominance of moderate IAD (2A) in these patients suggests that epidermal immaturity contributed to the progression of skin damage, favoring the development of lesions with partial-thickness skin loss.

Another relevant finding of this study concerns the delayed referral for consultation with the specialized dermatology nursing team. These referrals occurred predominantly after patients had already developed epidermal disruption, characterized as stage 2A–2B lesions. This scenario highlights a gap in preventive care and in the early identification of risk factors, favoring lesion progression and worsening skin damage.

The challenges in the early identification of IAD are consistent with the global consensus Incontinence-Associated Dermatitis: Moving Prevention Forward – Best Practice Update 2026 (Wounds International, 2026), which attributes delayed diagnosis to the lack of standardization in the assessment of Moisture-Associated Skin Damage and the absence of systematic risk assessment. In the pediatric setting, this scenario favors delayed recognition of IAD and the implementation of specialized interventions only at advanced erosive stages. Accordingly, the consensus emphasizes the need for predictive tools adapted to the specific characteristics of pediatric skin.

This context proved to be even more critical in light of the confirmed tissue fragility during childhood. According to Strunk, Steer, and Currie (2025), the skin of newborns, particularly preterm infants, is structurally and functionally immature, exhibiting a reduced barrier function and diminished antimicrobial activity, which increase susceptibility to infections and skin injuries. These physiological characteristics help explain the higher frequency and greater severity of IAD observed in the younger age groups of the present sample.

Among preschool children (1–5 years), mild to moderate IAD was the most common presentation, a finding that was possibly related to the transition between continuous diaper use and the development of sphincter control. During this developmental stage, the skin barrier has not yet reached full functional maturity, and exposure to moisture and irritants remains substantial<sup>(4,19)</sup>.

The severity of IAD was directly proportional to the complexity of the hospital unit (Figure 2). Whereas lower-complexity units predominantly presented mild lesions, ICUs and specialized wards, such as the oncohematology ward, concentrated

intermediate-to-severe lesions (1A–2A). As described by Rocha *et al.* (2022), this pattern reinforces that IAD is not solely a consequence of incontinence but also reflects patients' systemic instability and prolonged exposure to multiple risk factors, thereby constituting a marker of clinical frailty.

Pediatric patients receiving intensive care require a high level of nursing surveillance, frequent interventions, systematic skin assessments, appropriate hygiene, and more frequent diaper changes, in addition to monitoring risk factors such as the use of vasoactive drugs, sedation, and medical devices. In this context, the occurrence of skin lesions indicated weaknesses in care processes related to hygiene and continuous skin assessment<sup>(3)</sup>. Furthermore, epidermal disruption may serve as a portal of entry for infections and contribute to prolonged hospitalization, particularly in ICUs<sup>(22)</sup>.

When lesion severity was stratified using the Ghent Global IAD Categorisation Tool (GLOBIAD), children with complex comorbidities predominantly presented early-stage IAD. Among patients with congenital malformations and/or genetic syndromes, approximately 70% of lesions were classified as stages 1A and 2A. Similarly, among patients with neurological conditions, approximately 90% of lesions were concentrated within these same stages. This scenario suggests that intensive surveillance, driven by the rigorous implementation of PI prevention protocols inherent to the management of immobility and the chronic use of medical devices, acted as a protective factor against IAD progression.

Therefore, although IAD has often been treated as a secondary priority compared with PI prevention, the systematic skin inspection implemented as part of PI prevention ultimately ensures early diagnosis, interrupting IAD progression before extensive tissue loss or severe infectious colonization occurs. Appropriate management of IAD requires healthcare professionals to accurately differentiate it from other types of skin lesions, such as early-stage PIs or simple erythema<sup>(11)</sup>.

It should be emphasized that many of these patients with chronic conditions remained in continuous diaper use, which kept them exposed to moisture and irritant substances, constituting a persistent risk for the development of IAD. However, chronic conditions associated with neurogenic incontinence or immunosuppression, such as myelomeningocele, leukemia, and BMT, favor the progression of IAD and the development of secondary infections, as described in the literature<sup>(17)</sup>.

Patients receiving chemotherapy and experiencing neutropenia presented an environment conducive to the development of severe and/or infectious IAD. Among patients classified as having comorbidities related to oncohematological and immunological diseases, 19 consultations were recorded, representing approximately 20% of all cases, of which 12 lesions were classified as IAD 2A and two as IAD 2B. The cutaneous and gastrointestinal toxicity of chemotherapeutic agents compromises the epidermal barrier, whereas immunosuppression impairs the wound-healing process, promoting the progression of dermatitis to more advanced stages, such as 2A<sup>(20,24)</sup>.

Another relevant finding was the occurrence of severe IAD (2B) among patients without previous comorbidities, suggesting the influence of factors extrinsic to the individual, such as episodes of acute diarrhea or deficiencies in care practices. Comparable findings were reported by Chianca *et al.* (2016), who, in a cohort study involving critically ill patients, identified that the occurrence of IAD may be associated with factors external to the underlying clinical condition, such as moisture exposure and inadequate care practices.

Regarding sex, although previous studies, such as that by Balaguer-López *et al.* (2024), did not identify a significant association between sex and the occurrence of IAD, the present study found a higher frequency of mild IAD (1B) among girls and more severe IAD (2B) among boys, with a statistically significant association ( $p \approx 0.002$ ). Male perigenital anatomy, with greater occlusion and retention of excreta, may explain this difference.

Conversely, among females, the shorter anatomical distance between the urethra, vagina, and anus, together with the thinner and more sensitive skin during childhood, may have favored the spread of skin irritation, resulting in the development of earlier lesions, although they were less extensive. These findings reinforce the need for individualized inspection and prevention protocols that consider the anatomical and physiological characteristics of each pediatric patient.

Regarding anatomical site, the perianal region proved to be the most susceptible to maceration and irritation resulting from exposure to urine and feces, accounting for the highest occurrence of moderate IAD (2A), consistent with the pathophysiology of progressive skin inflammation. In contrast, mild or mixed lesions (1A–2A) were more frequently identified in adjacent areas, such as the perineal and gluteal regions.

## Severity of lesions, diagnosis, and therapeutic implications of incontinence-associated dermatitis

Most lesions were classified as IAD with skin loss, accounting for 64% of all cases (classifications 2A and 2B), representing more than half of all diagnosed cases of IAD, with a clear predominance of IAD 2A (53%).

In contrast, early-stage lesions without skin loss (1A and 1B) accounted for only 36% of the lesions observed. This pattern suggests that early identification has occurred too late, since most lesions were already at stages involving skin tissue damage, allowing rapid progression of skin injury, a characteristic further intensified by the vulnerability of pediatric skin and by extrinsic factors such as fecal exposure and friction.

Although the population studied by Ramalho *et al.* (2024) consisted of adults admitted to ICUs, the use of the same classification tool (GLOBIAD) allows methodological comparison. In their sample, the prevalence of IAD was 22.5%, with 55.5% of lesions classified as IAD 1A and 44.4% as IAD 2A. No patients presented signs of infection corresponding to categories 1B or 2B.

In contrast, the present study found a higher proportion of erosive and advanced-stage lesions (n=53 patients with IAD 2A and 11 with IAD 2B), reinforcing the need to improve early identification and clinical surveillance in pediatric populations. The presence of IAD 2B in 11% of cases highlights the urgent need for robust prevention and early detection strategies aimed at preventing progression to secondary infections. These findings confirm the importance of systematic assessment and the use of standardized instruments by the nursing team, which are essential for early recognition of lesion severity and for guiding timely interventions.

Regarding the treatments employed, a relevant finding was the inappropriate or non-indicated use of non-antifungal products in the context of infected lesions. The scientific literature consistently indicates that, in the presence of secondary fungal infection, the therapeutic priority should be the eradication of the infectious agent before introducing occlusive or regenerative therapies, since these may negatively interfere with microbiological control of the lesion<sup>(10)</sup>.

In the present study, lesions classified as 1B and 2B were initially managed with basic protective barriers or wound-healing products until appropriate assessment and diagnosis were performed by the specialized dermatology nursing team. In this context, it should be emphasized that the indiscriminate use of advanced occlusive barriers without a specific clinical indication may promote the formation of a warm and moist environment favorable to fungal proliferation and worsening of the inflammatory process, thereby delaying or even preventing re-epithelialization, including in lesions with tissue loss. International and national guidelines reinforce the need for careful selection of dressings and barrier products, prioritizing formulations that preserve skin microclimate balance and prevent maceration<sup>(1,25)</sup>.

These findings reveal an important gap in the scientific literature, characterized by the scarcity of robust studies on IAD in the pediatric population. Although the Best Practice Update (2026) represents an advance by establishing more rigorous diagnostic criteria to reduce the misclassification of IAD as PI, its recommendations remain predominantly based on evidence derived from adult patients, reflecting the limited epidemiological evidence available in childhood. This limitation is corroborated by Balaguer-López *et al.* (2024) and by recent national initiatives (GAPSKI *et al.*, 2026), which also highlight the lack of conceptual, diagnostic, and care standardization in this field.

Many healthcare services use adapted tools or scales that have not been validated for pediatric patients, making comparisons of clinical outcomes difficult and limiting nurses' support in selecting advanced barrier technologies. Therefore, by rigorously applying GLOBIAD in pediatric patients and demonstrating an alarming profile of erosive lesions, this study not only aligns with the international trends of 2026 but also fulfills a crucial role in addressing an urgent gap in the literature and expanding scientific knowledge on IAD in pediatrics and neonatology<sup>(15)</sup>.

## Study limitations

A limitation of this study is the scarcity of scientific evidence regarding IAD in pediatric patients, which limited comparison of the findings and appropriate contextualization of results with previous studies, as well as the analysis of therapeutic approaches adopted across different healthcare settings. This gap represents a challenge for nursing practice,

particularly regarding the standardization of care and the implementation of interventions supported by robust scientific evidence. Furthermore, because of cross-sectional study design, causal relationships cannot be established.

## Recommendations

The findings also highlight the need for timely referral to the specialized dermatology team as an integral component of IAD prevention and treatment, particularly in settings where these lesions are still not adequately prioritized in clinical practice. Underrecognition of IAD may result in delayed diagnosis, inappropriate management, and lesion progression, compromising skin integrity, increasing patient discomfort, and negatively affecting quality of life.

Furthermore, the absence of a specialized approach has direct implications for nursing care, as it hinders the implementation of evidence-based practices, increases the healthcare team's workload, and limits the effectiveness of preventive interventions, reinforcing the importance of interdisciplinary care and integrated collaboration between the nursing team and specialists in wound management.

## CONCLUSION

IAD classified as 2A was the most common presentation among the study participants, indicating that lesions involving skin loss were the most frequent. In addition, a statistically significant association was found between IAD severity and several variables, including: age group, with greater severity among neonates and infants; hospital unit, with more severe lesions among patients receiving high-complexity care; and sex, according to anatomical particularities.

Overall, the high incidence of IAD among neonates and young children reflects the combined effects of skin fragility, physiological immaturity, continuous exposure to moisture, and complex systemic conditions. These findings reinforce the importance of prevention, early management, and continuous clinical surveillance as fundamental strategies for ensuring the safety and quality of pediatric care.

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