

(RESEARCH ARTICLE)



Profile of contact dermatitis in the inpatient department of Dr. Soetomo General Hospital Surabaya

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Abstract

Background: Contact dermatitis (CD) is a common inflammatory skin disorder triggered by exposure to external substances, resulting in immune responses and skin or mucosal inflammation. CD is categorized into allergic contact dermatitis (ACD) and irritant contact dermatitis (ICD), with CD accounting for 70-90% of skin diseases. Of these, 80% are ICD and 20% ACD. In Indonesia, the prevalence of dermatitis is 6.78%, with ICD comprising 66% and ACD 34%.

Objective: To evaluate the clinical profile of CD patients admitted to the inpatient department of Dr. Soetomo General Hospital, Surabaya, during the years 2020-2021.

Methods: This descriptive, retrospective study used total sampling from medical records of all CD patients admitted to the hospital who met the inclusion criteria.

Results: The number of contact dermatitis patients found was 44 patients, ACD was the most common type (61.36%), and the majority of patients stayed for 0-7 days (45.45%). Most patients were aged 18-65 years (47.73%) and female (52.27%). Allergens were the primary trigger (50%). Among the patients, 88.64% had no history of allergies, but 97.73% had underlying history. Erythema was the most frequent clinical manifestation (16.48%), predominantly in the genital area (20.34%).

Conclusion: ACD was the predominant form of CD among inpatients, with a high prevalence in females aged 18-65 years. Allergens were the primary trigger, and erythema was the most common clinical presentation, particularly in the genital area.

Keywords: Profile; Contact Dermatitis; Inpatient Department; Human and Diseases

1. Introduction

A common inflammatory skin condition that is often known to be caused by exposure to exogenous substances that cause an immune response and result in inflammation of the skin and/or mucous membranes is contact dermatitis (CD). The category of CD can be divided into allergic CD (ACD), irritant CD (ICD) [1]. Seventy to ninety percent of skin diseases are known to be caused by CD. Around 80% of AC cases are ICD, while for ACD there are around 20% of cases [2].

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Contact dermatitis is a great imitator that can mimic various skin diseases, such as atopic dermatitis, lichen planus, and angioedema [6]. The clinical presentation of irritant and allergic reactions can overlap consisting of erythema, edema, and vesiculation, as well as crusting, oozing, or erosion if severe. Irritant reactions are limited to the area of direct contact with the triggering agent and can develop within minutes to hours after exposure. After contact with the irritant, the affected skin can experience stinging, burning, itching, and pain. In contrast, ACD manifests with itching and takes at least 24 to 72 hours (or even longer) to develop after repeated exposure to the allergen. Allergic contact reactions are also usually localized to the site of contact, involvement can extend beyond direct contact with moderate or more severe involvement. Furthermore, in cases of systemic exposure, for example due to metal, bone, or dental implants, individuals may suffer from a generalized reaction known as systemic contact dermatitis [7,8]. The diagnosis of CD is based on a complete medical history, including an occupational history with the aim of tracing clues to substances suspected of causing contact dermatitis in the patient. In addition to the well-known diagnostic tests or patch tests, there are many other diagnostic tests that can be used to assist in the diagnosis of CD in identifying causative allergens including photopatch tests, skin tests to detect direct contact reactions, serum allergen-specific IgE tests and qualitative and quantitative testing of allergens in patients with suspected substances. Prior to treatment, the suspected irritant or allergen must be completely avoided including removal of the patient from the environment containing these substances. In addition, it is also important to restore skin barrier function and reduce skin inflammation through various treatments such as emollients, topical corticosteroids, antihistamines, and systemic corticosteroids and immunosuppressants [6].

Contact dermatitis (CD), both allergic (ACD) and irritant (ICD), is a common reason for dermatology consultation in hospitalized patients. Diagnostic methods, medical and surgical treatments across specialties place patients at risk for developing systemic and local CD through various routes of exposure including topical, oral/mucosal, intravenous, intramuscular, and inhalation, as well as through implanted devices [7]. According to a recent study, almost 10% of adult and pediatric inpatient dermatology consultations result in a diagnosis of CD. Other contemporary studies have shown that CD is diagnosed in approximately 2-8% of inpatient dermatology consultations [7,8]. Hospitalized patients are at high risk for developing CD because they undergo several diagnostic, medical, and surgical procedures that require wound or skin care involving exposure to antiseptics, antibiotics, and adhesives [7]. Other factors such as the type of disease also affect the incidence of contact dermatitis in hospitalized patients. The presence of venous insufficiency, heart disease, and orthopedics with the use of external devices and implants as one of the treatments or the use of ostomy in patients with colorectal cancer, inflammatory bowel disease or irritable bowel syndrome can affect the incidence of CD [8].

Patient demographic factors such as age, gender, occupation and history of allergies can also affect the incidence of CD. Research by Ginting (2020) [9] showed that the largest age group of ACD sufferers was 19-25 years (34%), while in ICD it was 26-45 years (31.4%). Most contact dermatitis patients were women (79.3%), while the rest (20.7%) were men. There were two occupational groups with the most data, namely housewives (31.4%) in ICD and private employees (25.6%) in ACD. Food allergies were the most common history of skin disease in ACD with 31 (12.7%) patients and ICD with 12 (8.2%) patients [3]. The incidence of CD in hospitalized patients tends to vary in different places. In the world, the incidence of CD in hospitalized patients contributes approximately 3.89% of the incidence of CD in general. In Israel, for example, the incidence of CD was 7.0 (95% CI 7.0–7.0) per 1000 person-years (age-adjusted, 6.9/1000 person-years). Age-specific rates were highest in the group less than 6 months, where the rate per 1000 person-years was significantly higher in males (83.1 [95% CI 81.5–84.8]) than in females (57.3 [95% CI 55.9–58.8]). Patients with a minimum age of 6 months, a maximum age of 12 years, and a minimum age of 18 or more accounted for 13.4%, 54.0%, 4.4%, and 28.2% of CD incidence in hospitalized patients, respectively [10]. While contact dermatitis (CD) is a common dermatological condition, there has been a lack of studies on the prevalence and incidence of CD specifically in inpatient populations in Indonesia over the past five years. Dr. Soetomo General Hospital in Surabaya, East Java, is a leading referral hospital that provides both inpatient and outpatient care. Research on CD in the outpatient setting conducted at the hospital in 2018-2019 revealed notable prevalence rates. Specifically, the study found that 61.9% of patients diagnosed with allergic contact dermatitis (ACD) and 38.1% with irritant contact dermatitis (ICD) were seen in outpatient clinics. The majority of these patients were women (79.3%), with a significant proportion (32.7%) aged between 26 and 45 years. Additionally, 25.3% of patients were housewives. Other relevant patient history factors included previous diagnoses of atopic dermatitis (2.3%), food allergies (11%), and drug allergies (2.8%) [9]. Despite these findings in the outpatient setting, there remains a gap in understanding the profile of CD among inpatient populations, particularly with regard to how it presents in hospitalized patients. Thus, there is a pressing need to examine the prevalence, potential risk factors, and other variables that may influence the incidence of CD in the inpatient department at Dr. Soetomo General Hospital during the 2020-2021 period. This study aims to fill this gap and provide valuable data on the characteristics and underlying factors of CD in hospitalized patients, which could inform better diagnostic and treatment strategies in clinical practice.

2. Materials and Methods

This study is a descriptive study using secondary data in the form of patient medical records, with a retrospective approach to evaluate the profile of contact dermatitis (CD) patients at the Inpatient Department Dr. Soetomo General Hospital Surabaya during the period 2020–2021. The study population included all CD patients treated at the Inpatient Department Dr. Soetomo General Hospital, while the study sample consisted of all CD patients in the period 2020–2021 who met the inclusion criteria, taken using the total sampling method. Samples were only taken from patients who had complete and legible medical records, while patients with illegible medical records were excluded from this study.

2.1. Ethics

This study has been approved by the Research Ethics Committee at Dr. Soetomo Hospital Surabaya (No.1515/LOE/301.4.2/XI/2023). The patient's name identity is not written in the study so that the identity is maintained, the confidentiality of patient data will be maintained by the author, and all information obtained is only used for research purposes.

3. Results

The results of the secondary data observation study in the form of medical records of CD patients at the Inpatient Department Dr. Soetomo General Hospital Surabaya for the period 2020-2021 were reported quantitatively and data was obtained for 44 patients. Table 1 shows that the sample consisted of 27 ACD patients and 17 ICD patients with the majority of hospitalization lengths of only <7 days. It is known that the largest number was found in patients with the age group 18-65, namely 21 patients (47.73%) and the age group 0-17 years 20 patients (45.45%). Table 2 also shows that CD patients in the Inpatient Department of Dr. Soetomo General Hospital Surabaya for the period 2020 - 2021 were female (52.27%) and male (47.73%). The distribution of patient occupation data found that the most were unemployed patients (43.18%) and the second were private workers (20.45%).

Table 1 Diagnose distribution

Diagnose Distribution	Total	%
ACD	27	61.36
ICD	17	38.64
Total	44	100

ACD = allergic contact dermatitis; ICD = irritant contact dermatitis.

Table 2 Subject characteristics

Subject Characteristics	ACD		ICD		Total	
	Total	%	Total	%	Total	%
0 – 17 Years Old	11	40.74	9	52.94	20	45.45
18 – 65 Years Old	14	51.85	7	41.18	21	47.73
66 – 79 Years Old	2	7.41	0	0	2	4.55
80 – 99 Years Old	0	0	1	5.88	1	2.27
Total	27	100	17	100	44	100
Gender						
Female	13	48.15	10	58.82	23	52.27
Male	14	51.85	7	41.18	21	47.73
Total	27	100	17	100	44	100
Occupation						

Unemployed	11	40.74	8	47.06	19	43.18
Student	3	11.11	0	0	3	6.82
College Student	0	0	1	5.88	1	2.27
Housewife	5	18.52	2	11.76	7	15.91
Private Employees	6	22.22	3	17.65	9	20.45
Others	2	7.41	3	17.65	5	11.36
Total	27	100	17	100	44	100

ACD = allergic contact dermatitis; ICD = irritant contact dermatitis

Table 3 Risk factors

Risk Factors	Total	%
Inpatient stay duration		
0 - 7 days	20	45.45
8 - 14 days	10	22.73
15 - 28 days	12	27.27
29 - 90 days	1	2.27
More than 3 months (>91 days)	1	2.27
Total	44	100
Allergic History		
Has History of Allergies	2	4.55
No History of Allergies	39	88.6
No Data	3	6.82
Total	44	100
Underlying Disease History		
Has Underlying Disease	43	97.73
No Underlying Disease	1	2.27
Total	44	100
Underlying Disease		
Corona Virus	6	13.64
<i>Observation of other suspected disease</i>	6	13.64
Chemotherapy	4	9.09
Malignant Neoplasm	3	6.82
Intracerebral Hemorrhage	2	4.55
Nephrotic Syndrome	2	4.55
Asthma	2	4.55
Others	19	43.18
Total	44	100

Table 4 Trigger Material

Trigger Material	Total
ACD	Unknown (55.56%)
	Analgesic cream (3.70%)
	Olive oil (7.41%)
	Analgesic patch (3.70%)
	Plaster (3.70%)
	Blood pressure cuff (3.70%)
	Honey (3.70%)
	No Data (18.52%)
ICD	Unknown (23.53%)
	Soap / antiseptic (5.88%)
	Cajuput oil (17.65%)
	Analgesic oil (17.65%)
	Fecal material (5.88%)
	Diapers (17.65%)
	Cosmetic (5.88%)
	No Data (5.88%)
Total	100

ACD = allergic contact dermatitis; ICD = irritant contact dermatitis.

Table 5 Physical Examination

Physical Examination	Data	%
Clinical Presentation		
Erythema	15	16.48
Edema	6	6.59
Vesicle	2	2.2
Pustule	5	5.49
Crust	5	5.49
Scaly	3	3.3
Hyperpigmentation	4	4.4
Erythematous Macule	14	15.38
Papule	4	4.4
Erosion	7	7.69
Xerosis	7	7.69
Squama	5	5.49

No Data	14	15.38
Total	91	100
Lesion Area		
Hand	7	11.86
Face	9	15.25
Extremities	11	18.64
Genital	12	20.34
Body	5	8.47
No Data	15	25.42
Total	59	100

Note: One patient may experience more than one clinical manifestation and location.

4. Discussion

Contact dermatitis (CD) is generally defined as an inflammatory reaction of the skin caused by exposure to chemical, physical, or other triggering mechanisms, including allergens or irritants. ACD and ICD are common reasons for hospitalized patients to consult dermatologist. Recent studies from various parts of the world have shown that dermatology consultations in hospital settings result in a diagnosis of CD in around 2-8% [8].

4.1. Diagnose

Based on the results of this study, the number of patients with ACD was 27 patients (61.36%) out of a total of 44 patients. Meanwhile, the number of ICD patients was 17 patients (38.64%). These findings indicate that ACD was more prevalent than ICD in this patient population. These results are in line with research conducted by the West Sumatra Health Office in 2017 that dermatitis is included in the 10 diseases with the largest number of sufferers in West Sumatra, namely ACD data of 84,667 cases (4.7%) while ICD was 69,659 cases (3.9%) [11]. However, based on research conducted by Bains, Nash and Fonacier (2019) [12] showed that ICD is much more common, when compared to ACD, which is around 80% of all cases. ICD is more common than ACD because ICD is triggered by irritants that are more often found in the environment [13]. In addition, in the case of ICD, individuals do not require prior sensitization to irritants. However, in this study it was found that the number of ACD patients was greater than the number of ICD patients and this could be due to the majority of subjects in this study having almost the same characteristics of the body's response to allergens because ACD requires prior sensitization to allergens, which means the body must have been exposed to the substance before to develop an allergic reaction.

4.2. Length of Hospitalization

Based on the results, the distribution of the length of hospitalization of CD patients at I Inpatient Department Dr. Soetomo General Hospital Surabaya for the period 2020-2021 was relatively short, namely, 20 patients (45.45%) were mostly treated for 0-7 days. This can be caused by intense exposure to triggers in a short time or other specific risk factors. Previous research discussing the length of hospitalization for CD patients has not been found. However, the length of CD treatment can take weeks or even months after the CD diagnosis is confirmed and the causative agent is known, during which time the patient may not be able to carry out normal activities optimally [14].

4.3. Ages

Based on the findings, the majority of CD patients at the Inpatient Department Dr. Soetomo General Hospital Surabaya in the 2020 - 2021 period were in the age range of 18-65 years, namely 21 patients (47.73%), with the majority suffering from ACD as many as 14 patients (51.85%). Meanwhile, in ICD patients, as many as 9 patients (52.94%) out of 20 patients (45.45%) were aged 0-17 years. This finding is in line with research conducted by Joshi, Maczuga and Flamm (2023) [15] which showed that ACD sufferers were predominantly aged 18-44 years, as well as research by Hukma, Indrastiti and Kurniati (2023) [16] which reported that ICD incidents caused by diapers in Indonesia mostly occurred at the age of 6-12 months.

4.4. Genders

Based on the research results, the data on CD patients showed that the majority of gender was female, with 23 patients (52.27%), while the data were male, with 21 patients (47.73%). These results are in line with a study by Ginting et al., (2021) [3] which showed that CD patients were dominated by women, 291 patients (79.3%) and men, 76 patients (20.7%). Based on the Aesthetic Surgery Journal quoted from Suryani's study (2011) [17], women have a higher risk of developing skin diseases than men, because there are differences between men's and women's skin which can be seen in hair follicles, sebaceous glands, sweat glands, and hormonal influences. Men's skin is dominated by androgen hormones, which cause more sweat production and thicker hair growth, while women's skin is thinner, making it more susceptible to damage. It can be concluded that women tend to be at higher risk of developing CD.

4.5. Occupation

In this study, the results showed that the majority of patients with CD at the Inpatient Department Dr. Soetomo General Hospital Surabaya for the period 2020-2021 were unemployed, amounting to 19 patients (43.18%). Based on the Bavarian study (1999) in (Peiser et al., 2012) [18] showed that around one third of patients registered as Occupational Contact Dermatitis (OCD) were greatly influenced by their profession and even unemployment. However, research that proves how much influence someone who has not or does not work has on the risk of developing CD is not yet available. In addition, the second majority data of 9 patients (20.45%) showed that the second largest occupation was entrepreneurs or self-employed, this result is in accordance with the research of Ginting et al., (2021) [3] which showed that 90 patients (24.7%) of CD patients were entrepreneurs or self-employed.

4.6. Trigger Material

Based on the results, the most common triggering material causing CD is allergen triggering material, which is 22 patients (50%). The allergen triggering materials in question are analgesic cream, olive oil, analgesic patch, plaster, blood pressure cuff, and honey.

Analgesic cream is a cream containing the active ingredient Clotrimazole. Clotrimazole is a drug used in the treatment and cure of fungal infections. This drug is included in the Imidazole drug group [19]. The results of a study conducted by Mahajan et al., (2015) [20] showed that there were several subjects who experienced ACD due to topical Clotrimazole administration in the patch test. Olive oil is a versatile ingredient that can be used not only for cooking, but also in cosmetics. Olive oil contains fatty acids, especially oleic acid, linoleic acid, some linolenic acids, and omega-3 and omega-6, which are also found in fatty fish such as salmon. This olive oil also contains antioxidant polyphenol compounds that prevent premature skin aging. Almost all materials in the form of oil and derived from plants can be accepted by human skin, without any significant reaction, only a few reports indicate the emergence of allergies to the use of olive oil. As in the study conducted by Esteve et al., (2012) [21] showed that in some cases of ACD to olive oil is rarely found. However, cases of patients were found who showed ACD to extra virgin olive oil but not to ordinary oil. In the study, patients were tested with a skin test using the main constituents of olive oil (glycerides of oleic acid, palmitic, linoleic, stearic and arachidic, squalene, phytosterol, and tocopherol) and the results showed a negative response in all cases.

Analgesic patch is one of the products that is often used to treat muscle and joint pain. Although this analgesic patch is effective in providing treatment for muscle and joint pain, there is a risk of ACD due to the ingredients contained in it. This analgesic patch contains Methylsalicylate which causes a burning sensation when attached to the skin. In some people, prolonged use can cause allergic reactions at the patch attachment site such as redness, itching, and rashes.

Plasters and blood pressure cuffs are medical devices made from latex. Reports on the prevalence of latex allergy in the general population vary. Latex allergy affects about 1 to 2 percent of the population. However, a study shows that latex sensitization is more common in health workers exposed to latex compared to the general population. However, the clinical manifestations of latex allergy in health workers and the general population are more or less the same [22].

Just like olive oil, allergies caused by honey are very rare. Honey is known as a versatile food ingredient. In addition, honey is also known as a food that has the potential to cause allergies and can cause symptoms ranging from mild symptoms such as coughing to severe cases such as anaphylaxis. Honey contains components derived from bees (glandular secretions and wax) as well as flower nectar and pollen. Pollen protein (Compositae pollen) and glandular protein from bees are the main allergens in ACD cases. In the general population, it is estimated that <0.001% of allergy incidents to honey [23].

This study found that 16 patients (36.36%) in the Inpatient Department of Dr. Soetomo General Hospital developed contact dermatitis (CD) due to irritant triggers, including soap, antiseptics, cajuput oil, analgesic oil, fecal material,

diapers, and cosmetics. The frequent use of hand hygiene products, particularly soap and antiseptics, likely contributed to irritant contact dermatitis (ICD). This is consistent with the findings of Damayanti et al. (2021) [24], which reported that 56.60% of participants washed their hands more than 10 times a day, and 82.61% of those with CD symptoms used antiseptic soap. Repeated use of soaps and antiseptics, especially during the Covid-19 pandemic, is a key irritant. Alcohol-based hand sanitizers are generally less irritating than soaps, but antiseptic soaps contain active ingredients like Chlorhexidine, Triclosan, and iodine compounds, which can cause skin irritation [25].

Cajuput oil, which is often used as a topical medicine for various skin and respiratory problems, can cause ICD in some individuals. This dermatitis occurs when the skin is exposed to cajuput oil which contains active components such as cineole and terpenes, which can trigger an irritant reaction in sensitive skin. Symptoms that arise usually include redness, itching, burning, and inflammation in the exposed area. Although cajuput oil is generally considered safe, excessive use or on damaged skin can increase the risk of ICD. In addition to cajuput oil, other types of analgesic oils can also pose a risk of ICD because essential oils contain many plant products and chemicals [26].

Diapers and fecal material are interrelated. CD is the main form of diaper rash, where rashes often appear in the diaper area due to several factors such as infrequently changed diapers causing moisture from contact with urine, skin friction, and mechanical abrasion. Irritants such as bile salts in feces can also damage the protective layer of lipids and proteins on the skin. In addition, increased skin pH triggered by urine, feces, and microbes worsens this condition, triggering the appearance of diaper rash [27].

Cosmetics are a mixture of several ingredients that are used on the body surface (such as skin, hair, lips, and genital areas), teeth, or oral mucosa for the purpose of cleaning and scenting. Irritation reactions from the use of cosmetics generally occur in individuals with sensitive skin or who have a history of atopy. Skin care products and moisturizers are often the main triggers of CD from cosmetics, followed by make up, hair care products, and facial care products [28].

4.7. Allergy History

The findings showed that the majority of CD patients at Inpatient Department Dr. Soetomo General Hospital Surabaya in the 2020 - 2021 period did not have a history of allergies, namely out of 44 patients, 39 patients (88.64%). The results of this study contradict the research conducted by Mahrnunisa, Sumadiono and Mulatsih (2021) [29] that there is a significant relationship between someone who has a history of allergies and the appearance of allergies. This difference may be due to the patient's lack of knowledge or lack of exploring the history of allergies or diseases they have because they do not check with a doctor.

4.8. Underlying History

The results of the study on the results for the patient's underlying history before developing CD showed that the majority had a history of underlying of 43 patients (97.73%), and 1 patient (2.27%) had been diagnosed with CD from the start. Underlying history in CD patients at Inpatient Department Dr. Soetomo General Hospital Surabaya in the 2020-2021 period had the most Corona virus patients, 6 patients (13.64%) and observation of other suspected diseases, 6 patients (13.64%). Based on research conducted by Babino, Argenziano and Balato (2022) [30], there is clear evidence of an increase in the prevalence of ICD and ACD in response to the COVID-19 pandemic. Corona virus is a disease that attacks the upper respiratory tract, but in some cases, this virus can also attack the skin.

4.9. Efflorescence

In the results of this study, patients can experience more than 1 efflorescence and the majority of clinical manifestations were found to be erythema in 15 patients (16.48%) and erythematous macules in 14 patients (15.38%). In a study conducted by Gabriel Rio WidiPriyatama et al., (2023) [31] the most common clinical manifestation found in CD patients besides itching was erythematous, which was 212 patients (45.9%). Similar results were also found in the study by Rubianti and Rosita (2019) [28], 256 patients out of 289 experienced efflorescence in the form of erythematous macules. Clinical characteristics of CD can include itching, burning, and pain. Clinical findings are generally dermatitis at the site of contact with the causative agent. Physical findings can vary from vague erythema to severe and widespread dermatitis and erythema multiforme which resembles erythema [32]. In the case of ICD, it is caused by inflammation arising from the release of proinflammatory cytokines from keratinocytes, usually in response to chemical stimuli. This condition mainly causes disruption of the skin layer, changes in epidermal cells, and the release of cytokines. While in the case of ACD, it is caused by skin inflammation mediated by T cells due to repeated exposure of the skin to haptens in sensitized individuals [33].

4.10. Lesion Area

The results of this study indicate that the distribution of lesion areas in CD patients at Inpatient Department Dr. Soetomo General Hospital Surabaya in the 2020-2021 period was mostly in the genital area of 12 patients (20.34%). These results are in line with research conducted by Usatine and Riojas (2010) [34] that dermatitis lesions can cover large areas of the body, including the face and genital area. However, some literature states that CD can be found in any area of the body, but is more common on the hands [13]. Lesions in the genital area are often caused by areas covered by diapers such as the thighs, buttocks, and around the anus. This condition is one of the most common skin problems in infants, children whose diapers are often wet and rarely changed or adult patients who experience incontinence and use diapers to collect urine or feces [35].

List Of Abbreviations

CD: Contact Dermatitis; ACD: Allergic Contact Dermatitis; ICD: Irritant Contact; OCD: Occupational Contact Dermatitis.

5. Conclusion

Contact dermatitis (CD) patients at Inpatient Department Dr. Soetomo General Hospital Surabaya in the 2020-2021 period were mostly diagnosed with allergic contact dermatitis (ACD) at 61.36%, with the length of hospitalization mostly in the range of 0-7 days (45.45%). Most patients were aged 18-65 years (47.73%), female (52.27%), unemployed (43.18%). Allergens were the most common triggers causing CD (50%). Based on risk factors, most patients had no history of allergies (88.64%) but the majority had a history of underlying disease (97.73%). The most common clinical manifestation found was erythema efflorescence (16.48%) and most often appeared in the genital area (20.34%).

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declared there's no conflict of interest.

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