EVALUATION OF INTERNET INFORMATION ON PEDIATRIC ATOPIC DERMATITIS

AVALIAÇÃO DE INFORMAÇÕES NA INTERNET SOBRE DERMATITE ATÓPICA

PEDIÁTRICA

EVALUACIÓN DE INFORMACIÓN EN INTERNET SOBRE DERMATITIS ATÓPICA

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ABSTRACT

Objective: to evaluate internet contents related to Atopic Dermatitis in children and adolescents.

Method: this is an exploratory study, carried out through the Google® search engine, using a semi-structured questionnaire for evaluation. A database was built using Microsoft Excel 2010® software. After organizing the data, we proceeded to the evaluation of each page, with a script of ten semi-structured questions, with three possible answers. Results: a total of 31 sites were evaluated. It was found that 29 described what atopic dermatitis is and 25 reported the characteristic symptoms of this disease. Regarding diagnosis, 21 sites did not clarify the need for clinical diagnosis by a health professional, and 23 pages provided guidance on treatment. It should be added that 14 sites do not show the authorship of the content. Conclusion: it is warned that users should be aware of the authenticity of the information presented in this medium, since inconsistent information can expose the individual to risky situations. It is considered important, therefore, that this search be conducted in reliable sources and not replace the evaluation and conduct of the health professional.

Descriptors: Atopic Dermatitis; Internet; Skin Diseases; Information; Dermatitis; Dermatology.

RESUMO

Objetivo: Avaliar conteúdos apresentados na internet relacionados à Dermatite Atópica em crianças e adolescentes. Método: trata-se de um estudo exploratório, realizado por meio do site de buscas Google®, utilizando-se um questionário semiestruturado para a avaliação. Construiu-se um banco de dados no software Microsoft Excel 2010®. Procedeu-se, após a organização dos dados, à avaliação de cada página, com um roteiro de dez perguntas semiestruturado, com três possíveis respostas. Resultados: avaliaram-se 31 sites. Aponta-se que 29 descrevem o que é a Dermatite Atópica e 25 relatam os sintomas característicos desta doença. Registra-se, quanto ao diagnóstico,
que, em 21 sites, não se esclarece a necessidade do diagnóstico clínico por parte de um profissional de saúde e, em 23 páginas, encontram-se orientações quanto ao tratamento. Acrescenta-se que 14 sites não evidenciam a autoria do conteúdo. **Conclusão:** alerta-se, que os usuários devem estar atentos à autenticidade das informações apresentadas neste meio, visto que informações inconsistentes podem expor o indivíduo a situações de risco. Considera-se importante, por isso, que essa busca seja realizada em fontes confiáveis e não substitua a avaliação e a conduta do profissional de saúde.

**Descritores:** Dermatite Atópica; Internet; Dermatopatias; Informação; Dermatite; Dermatologia.

**RESUMEN**

**Objetivo:** evaluar los contenidos presentados en internet relacionados con la Dermatitis Atópica en niños y adolescentes. **Método:** se trata de un estudio exploratorio, realizado a través del buscador Google®, utilizando un cuestionario semiestructurado para la evaluación. Se creó una base de datos con el software Microsoft Excel 2010®. Después de organizar los datos, se evaluó cada página mediante un guión semiestructurado de diez preguntas con tres posibles respuestas. **Resultados:** se evaluaron 31 sitios. Se señala que 29 describen qué es la Dermatitis Atópica y 25 informan los síntomas característicos de esta enfermedad. En cuanto al diagnóstico, 21 sitios no aclaran la necesidad de un diagnóstico clínico por parte de un profesional de la salud y, en 23 páginas, hay pautas sobre el tratamiento. Además, 14 sitios no muestran la autoría del contenido. **Conclusión:** se advierte que los usuarios deben ser conscientes de la autenticidad de la información presentada en este medio, ya que información inconsistente puede exponer al individuo a situaciones de riesgo. Por tanto, se considera importante que esta búsqueda se realice a partir de fuentes fiables y no sustituya la valoración y conducta del profesional sanitario.

**Descritores:** Dermatitis Atópica; Internet; Enfermedades de la Piel; Información; Dermatitis; Dermatología.

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It is known that Atopic Dermatitis (AD) is a chronic inflammatory disease, which progresses with episodes of worsening followed by remission. It is pointed out that eczema is the characteristic lesion associated with pruritus of varying intensity and xeroderma. It can occur at any age, but is more prevalent in childhood, in children under seven years of age. It usually begins in the first years of life, and may last until adulthood. It is one of the most common inflammatory diseases of the skin.

The etiology is defined as multifactorial, with genetic, environmental and immunological features. It is perceived that different factors are involved in its appearance and evolution, among them: structural defects of the skin barrier; allergy; microbial colonization and others. It is understood that environmental factors, such as temperature, humidity, radiation, among others, also play an important role, being triggering or exacerbating factors.

AD can be associated with other allergic manifestations such as rhinitis, asthma, and food allergy because the associated skin barrier dysfunction, inflammation, and epidermal allergic sensitization are conducive to the development of allergic comorbidities.

It is understood that periods of exacerbation negatively affect the individual and his family members, because the constant itching and varying intensity cause changes in sleep and mood. In addition, the cost of medication for the treatment of the lesions and the constant skin care become a challenge for these patients to adhere to the appropriate therapy.

It is possible, through clinical evaluation of the signs, symptoms, and the patient's personal and family histories, to make the diagnosis. It is known that any part of the body can be affected, however, in infants, it is common to develop lesions in the face region and on the extensor surfaces. In children older than two years, lesions are seen in flexural regions such as knees, elbows, and buttocks.

AD is classified as mild, moderate, or severe, depending on the intensity of the symptoms presented. It should be noted that the individual may move between all categories. Several severity scales are used to facilitate the assessment, including the Severity Scoring of Atopic Dermatitis Index (SCORAD), which allows the assessment of the intensity of lesions and the impact of subjective symptoms such as quality of sleep and itching, and the results are used to categorize the patient's current condition.

It is noteworthy that the treatment of AD consists, firstly, in the orientation of the individual and his family group on the elimination of the triggering factors of the crises, and in the use of topical
anti-inflammatory medications, such as glucocorticoids or calcineurin inhibitors, which must be used to reduce the intensity of the lesions. Antihistamines to minimize pruritus and intensified hydration are also important steps in the treatment. Systemic immunosuppressants are indicated in cases of difficult control. It is warned that, sometimes, exacerbations may be accompanied by a secondary skin infection, requiring the use of antibiotics. The therapeutic approach and management of these patients should be individualized.\textsuperscript{15}

It is evaluated, in this context, that the use of the Internet as a means of searching for information, since it is an integral part of people’s daily lives, can act significantly, facilitating access to various contents and reaching audiences of different ages and levels of education. One realizes, however, the need to evaluate the information presented, because it may expose the individual to inconsistent data.\textsuperscript{16}

\section*{OBJECTIVE}

To evaluate internet contents related to Atopic Dermatitis in children and adolescents.

\section*{METHOD}

This is an exploratory study, conducted in October 2018, through the search site Google\textsuperscript{®} (<http://www.google.com.br>). The expressions “Atopic dermatitis in children” and “Atopic dermatitis in adolescents” were used. These expressions were chosen in order to simulate a search by an individual who is not a health professional. A specific methodology was followed,\textsuperscript{17} according to a previously published article.

A database was built in Microsoft Excel 2010\textsuperscript{®} software with the record of the links of the first 30 results obtained in the search for each expression. After organizing the data, we proceeded to the evaluation of each page, with a script of ten semi-structured questions, with three possible answers (yes, no, and partially), as described below. The information presented on each site and its relation to individuals with access to Google\textsuperscript{®} was verified.

The contents were scored according to the following questions.

1. What is AD?
2. Which symptoms are presented?
3. Which regions are affected?
4. What are the triggering/aggravating factors of the crises?
5. How is the diagnosis carried out?
6. What is the treatment for AD?
7. Is there an indication to seek a health professional?
8. Is there information about natural treatment?
9. Was this information written by (or under the direction of) a health care professional?

10. Describe the influence of parents or guardians on treatment and treatment adherence.

The term "YES" was used to answer the above questions when the site presented complete information about the description, clinical features, location of lesions, symptoms, diagnosis, triggering/aggravating factors, and treatment of AD. The term "NO" was chosen when the page did not present this information, and the term "PARTICULARLY" when the page mentioned only some of the criteria involved, not presenting the complete information.

RESULTS

The search for the words "Atopic dermatitis in children" and "Atopic dermatitis in adolescents" in the Google® search engine, located at <http://www.google.com.br>, yielded 205 thousand results for the first term and 79,100 results for the second. The links of the first three pages obtained in each search were selected with the objective of refining the search and reducing the number of sites evaluated, simulating a real search, normally carried out by an individual who is not a health professional.

In each page, ten links were chosen for further evaluation, totaling 60 sites, and only 31 sites were evaluated for the research. Table 1 shows the results obtained with each expression. Duplicate pages were evaluated only once.

<table>
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<th>Descriptors</th>
<th>Selected links</th>
<th>Scientific Articles</th>
<th>Videos</th>
<th>Photos</th>
<th>Questions and answers</th>
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<td>1</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>AD in adolescents</td>
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<td>1</td>
<td>3</td>
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<td>16</td>
<td>7</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>31</td>
</tr>
</tbody>
</table>

Figure 1. Results obtained in the first three pages and application of the exclusion criteria. Rio de Janeiro (RJ), Brazil, 2018.

It is noted that the conceptualization of AD as a chronic inflammatory disease of the skin that affects mainly children, but that can extend to the adult phase can be observed in 94% (29) of the evaluated pages (Figure 2). It is noteworthy, regarding the symptoms of the disease, that 25 (84%) of the 31 sites visited describe "itching" of variable intensity, the formation of bullous lesions (an aspect that deserves attention because, in general, it is not associated with AD) and peeling of the skin, as well as the appearance of wounds. It should be noted, however, that three (10%) pages did not report these symptoms in detail (Figure 3).
It is known that the appearance of the lesions is common on the face, neck and in regions of folds, such as knees and elbows. Thus, it was observed that 23 (74%) sites reported the regions where eczema may occur and eight (26%) did not mention this information (Figure 4). It was also verified that the majority of the visited pages (18; 58%) described the factors that can trigger or aggravate the flares of the disease. In contrast, eight sites (29%) did not mention these factors, and four (13%) reported them in partial form, without much detail (Figure 5).
It is pointed out that the diagnosis of AD is clinical. It was noticed, however, that 21 (68%) sites did not mention the need for clinical evaluation by a health professional or complementary laboratory tests, and nine (29%) made clear the importance of these tests so that the appropriate treatment can be carried out (Figure 6). In most of the sites visited, 23 (74%) provided guidance on the treatment of AD with glucocorticoids, oral antiallergic agents, moisturizing creams, and immunomodulators, and in five (16%) there was no information on any type of therapy (Figure 7).
that 45% (14) did not show the authorship of the information (Figure 8). It is noted that 21 (68%) had a precise orientation of the need to seek a specialist for clinical follow-up and ten (32%) did not have this indication (Figure 9).

![Figure 8](image)

**Figure 8.** Indication to seek a health professional. Rio de Janeiro (RJ), Brazil, 2018.

![Figure 9](image)

**Figure 9.** Authored or directed by the health care professional. Rio de Janeiro (RJ), Brazil, 2018.

Information on home treatments was sought, considering the characteristics of the crises with worsening of AD, since, without the proper medical follow-up, they can bring complications to the patient. Only four (13%) sites had guidelines for natural treatments (Graph 9), being cited the ingestion of foods containing Omega 3 and 6, sunbathing during some hours of the day (times with milder sunlight), swimming in the sea and the use of a mixture of oatmeal and water to apply on the lesions.

One site mentions that the use of this mixture of oatmeal and water or cornstarch can worsen AD, and wetdressing is recommended, which is wearing wet clothing underneath dry clothing after moisturizing the skin for a few hours to improve skin hydration and soothe itching and eczematous lesions.
It is verified, in the visited pages, as the treatment of children and adolescents was under the responsibility of parents and/or guardians, that there was a description of their influence on treatment adherence. It is understood that most of the sites (18-58%) described, indirectly, the influence of these individuals in the adherence to treatment, being related to the orientations to avoid crises and/or to ease them, as well as the constant hydration of the skin. It is noteworthy that, in 13 (42%) pages, there was no such description, neither indirectly (Figure 11).

It is perceived, nowadays, that day-to-day activities require a differentiated dynamic. It is evaluated, in this context, that the search for information tends to follow this flow. It is required that the content can be accessed anywhere and at any time. Thus, the Internet is shown to be the ideal environment to obtain various types of information. It is warned, however, that this convenience may expose the individual to incomplete or untrue data, resulting in a risk to their health.\textsuperscript{18-9}

In the search made through Google® about AD in children and adolescents, several results were obtained, and of the 31 sites selected for evaluation, 29 (94%) described this pathology and 25 (84%) the characteristic symptoms of the disease. These data show that the individual can obtain various types of information through Internet search engines, as observed in a study,\textsuperscript{18} with
healthcare students, where it was found that most (76.1%) used smartphones to connect to the web, facilitating access to information. It is also understood, in this context, that Google® was the main tool used, being diseases (18%), food (17%) and treatment and medicines (15.4%) the most searched subjects.

A study\textsuperscript{19} on access to health information on the Internet showed how this environment is used to obtain information. This research was carried out with a sample of 1,828 individuals, of whom approximately 70% reported using search engines. In this study, the participants ranked the reliability of the content obtained from various sources of information, with the opinion of doctors, health professionals or specialists being the most reliable, and search sites, blogs, non-specific magazines and newspapers, and television or radio being the least reliable. It was clear in this study that 55% (17) of the pages visited were written by or under the guidance of a health professional. It is understood, however, that 45% (14) did not clearly present the person responsible for the information described, compromising the veracity of the information.

It is pointed out that the diagnosis and treatment for AD must be made by a qualified health professional, because several factors must be evaluated for the definition of the patient's clinical picture and, thus, the administration of the appropriate treatment.\textsuperscript{4,13} It is noted that 21 (68%) sites did not report how the diagnosis of AD is made. It is emphasized that only nine (29%) make it clear that the clinical diagnosis should be made by a qualified health professional, i.e., through a medical consultation, preferably with a dermatologist and/or pediatrician.

It was also observed that 23 (74%) of the sites visited presented information about the treatment of AD, from the use of moisturizing creams to the use of antiallergic, glucocorticoids, immunomodulators, and antibiotics for cases of infection of eczematous lesions. It is argued, in this context, that the use of the Internet can somehow stimulate the individual to self-diagnosis and self-medication, as in a study\textsuperscript{19} suggested that most (70%) of the users shared the information obtained with family and friends. It is noteworthy that only 30% reported scheduling a medical appointment after searching the web, a fact that is worrisome, since the diagnosis of AD is essentially clinical and differentiated for each patient, therefore, performed by a physician. It is believed that the use of the virtual environment may induce the patient to start the treatment in an inappropriate way and, besides not having any result, it may worsen the underlying disease, since the individual is not qualified to make the diagnosis.

Self-medication is characterized by the use of a medication without the prescription and/or guidance of a health professional, constituting a risk to the individual's health, since it can hide a symptom and hinder the diagnosis process. It is understood, moreover, that drug interactions can occur, affecting its therapeutic effect and the individual's healing process.\textsuperscript{20} It is pointed out that
drug treatment is individual, that is, it must take into consideration the patient's clinical characteristics in order to choose the drug and adjust the dose and duration of treatment.

It is noted, regarding the treatment of children and adolescents, that parents/guardians may acquire the habits of self-medication due to the need for a quick solution to the discomfort presented by their children. It was shown in a study,\textsuperscript{21} on self-medication in children, that 88\% of the parents practiced self-medication with their children, having as motivations the easy access to medication (43\%) and the medical unavailability (26\%). It is evaluated, in this study, that 58\% of the pages evaluated demonstrated, indirectly, how parents and/or guardians can influence the treatment of children and adolescents. It is pointed out, however, that the care described was directed to reduce the incidence of crises, promote skin hydration and ease the symptoms of AD.

It was verified in a study,\textsuperscript{22} on the influence of the media on self-medication, that the advertising of medicines on the Internet is difficult to control, because they are offered in different ways and, in most cases, without registration with the competent regulatory agency, exposing individuals to supposed "miracle" medicines that have no proven therapeutic efficacy.

The use of topical and oral medications to reduce the inflammatory process and symptoms is considered fundamental in the treatment of AD. It is necessary, however, to assess the severity of the dermatitis and the presence of triggering factors and comorbidities in order to establish the appropriate treatment. The use of topical and oral glucocorticoids may be necessary, however, the use of this class of drugs for prolonged periods may cause several side effects, such as skin atrophy, stretch marks, glaucoma, suppression of the hypothalamo-pituitary-adrenal axis, among others.\textsuperscript{15,23}

It is noteworthy that these drugs are not classified as prescription retention, as in the case of antibiotic drugs (RDC No. 20/2011) and psychotropic drugs (Ordinance 344/1998), which means that the patient can buy this type of drug without having the proper prescription and start a treatment without medical monitoring, which can trigger serious side effects.

As another class of drugs that can be used, calcineurin inhibitors are listed, which act by inhibiting the activation of T lymphocytes and, consequently, the release of inflammatory cytokines. It is pointed out that these have advantages over the use of glucocorticoids, however, also have some uncomfortable adverse effects, such as burning soon after application, folliculitis, hyperesthesia and acne vulgaris.\textsuperscript{23}

It is emphasized that other drugs, such as antibiotics, for example, can be prescribed in case of secondary infections in skin sites with eczema. It is considered necessary, however, for the improvement of the individual's condition, besides the pharmacological treatment, the observation and removal of the triggering/aggravating factors and the application of moisturizers to reduce the
transepidermal water loss, avoiding the dryness of the skin and the appearance of eczematous lesions. 6-15

We can cite as limitations of the study the daily changes and new publications made on the Internet, generating constant changes. That is, if the research were to be carried out on another occasion, it is possible that we would find other sites as a result of the search.

CONCLUSION

It was observed in this study that most of the sites evaluated presented information about AD in a detailed way, demonstrating possible triggering and/or aggravating factors of the disease. It was also reported the orientation of the treatment used, directing the search for a health professional for the correct diagnosis and use of the appropriate therapy.

The participation of specialists in the elaboration of the published content was highlighted. It is pointed out that most of the visited pages were prepared with the participation of dermatologists (nine) and, in one of them, there was the participation of an allergist. Two pages had their content approved by a medical committee, and five pages had the participation of physicians without the specialty described. It is warned, however, that a large amount of information on the web still does not have the proper authorship highlighted, putting at risk the reliability of the information.

It is evaluated that the use of the virtual environment in the search for information brings facilities for the population's daily life. It is noteworthy, however, the concern with the authenticity of the information presented in this medium, since inconsistent information can induce the individual to experience risky situations. It is argued that health professionals should take advantage of this tool for the guidance and awareness of the population about health risks and, in particular, AD.

CONTRIBUTIONS

All authors contributed equally in the conception, analysis and interpretation of the research, in the writing and critical review with intellectual contribution, and in the approval of the final version.

CONFLICT OF INTERESTS

Nothing to declare.

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