

Itraconazole versus potassium iodide for cutaneous sporotrichosis: weighing up the pros and cons

Hudson Dutra Rezende^{1*} , Ana Carolina Trombetta Madia² , Andressa de Deus Mateus³ ,
Eneas Van Der Maas do Bem Filho³ , João Vitor Corte Perez¹ ,
Pedro Augusto Corrêa de Araújo Rodrigues Caldas³ , Sandra Lopes Mattos Dinato¹ 

Sporotrichosis is a versatile disease caused by a ubiquitous genus of soil-dwelling fungus called *Sporothrix* spp. and is frequently seen in tropical global areas. Several clinical manifestations have been reported in the literature ranging from localized cutaneous lesions to disseminated presentations.

Both “fixed” lesions and the lymphocutaneous pattern are expected to respond well to oral treatment, either with itraconazole or with potassium iodide; nonetheless, the question “which one to choose?” remains a matter of debate. Even though neither treatment has shown indubitable superiority, this discussion on the pros and cons of each therapy should not be taken for granted, since the appropriate care for the patient requires further practical observations in addition to the medication effectiveness alone, such as affordability and local drug availability.

Over the past decades, many outbreaks of *Sporothrix* spp. have been registered in different areas of Brazil. From 2010–2020, 374 cases of cutaneous sporotrichosis were notified in the city of São Paulo, shedding light on the topic and calling the attention to a possibly emerging public health issue¹. Similarly, in 2019, more than 240 cases were notified in the state of Rio de Janeiro alone, picturing yet another scenario of great concern². In fact, cases of localized sporotrichosis keep appearing throughout Brazil requiring from the attending physician smarter therapeutic decisions, since social conditions vary a lot from region to region and so does the prevalence of comorbidities, such as heart failure and renal insufficiency, which, in turn, imposes some limitations to drug usage.

Itraconazole is used to treat sporotrichosis. According to the Mycoses Study Group of the Infectious Diseases Society of America, itraconazole is considered the drug of choice for lymphocutaneous or fixed cutaneous sporotrichosis due to its good tolerability and low relapse rate³. It is suggested that most patients will benefit from a dose of 100–200 mg/day and that a period of 3–6 months is quite enough to cure most cases.

Especially for patients with limited budget and for those with contraindications to itraconazole (Table 1), successful treatment of sporotrichosis may be obtained with oral potassium iodide, which is less expensive and well tolerated⁴. For instance, approximately R\$120–240 (30–60 tablets) is required per month to treat a patient with itraconazole, while the same treatment with potassium iodide will cost nearly R\$100.

The patient is usually given a saturated solution of potassium iodide (SSPI). The mechanism by which SSPI works against *Sporothrix* spp. is not clear; however, its level of evidence in the current literature is the same of itraconazole³. Furthermore, SSPI is safe for children and common adverse effects are usually mild³.

SSPI must be administered three times a day, starting with five drops (each drop containing 67 mg of potassium iodide) ideally admixed in milk or juice^{1,4}. The dose is increased by 3–5 drops per day, and some patients may require up to 20 drops three times daily to show a satisfactory response^{1,4}. Lesions usually remit within 2–4 weeks. Perhaps, posology pictures the most challenging part of the treatment with SSPI since it may

¹Centro Universitário Lusíada, Department of Dermatology – Santos (SP), Brazil.

²Clínica privada, Dermatologist, – São Paulo (SP), Brazil.

³Hospital Escola Álvaro Alvim – Campos dos Goytacazes (RJ), Brazil.

*Corresponding author: contato@hudsondutra.com.br

Conflicts of interest: the authors declare there are no conflicts of interest. Funding: none.

Received on July 20, 2021. Accepted on August 14, 2021.

Table 1. Comparison between saturated potassium iodide and oral itraconazole for localized presentations of cutaneous sporotrichosis.

Level of evidence	Itraconazole	Saturated potassium iodide
	A2	A2
Common adverse effects	Usually seen at doses around 400 mg/day. Nausea and vomiting, abdominal pain, diarrhea.	Metallic taste and nausea.
Contraindications	Hypersensitivity to itraconazole (absolute). Heart failure, liver disease, pregnancy (category C) and lactation.	Hypersensitivity to iodide (absolute). Patients with thyroid dysfunction, renal and cardiac failure (relative).
Average time for clinical response	2–3 months	2–3 months
Length of therapy	Clinical cure – absence of disease activity in the lesion (pus, oozing, crust, mild erythema)	Clinical cure – absence of disease activity in the lesion (pus, oozing, crust, mild erythema)
Infancy	6–10 mg/kg, maximum 400 mg/day	1–2 g/day
Posology	100–200 mg/day	4–6 g/day
Fungus resistance	Rare	Rare

be difficult for some patients to copy with. Nonetheless, a thorough explanation at the time of prescription usually suffices.

Regarding the patients' response to therapy, a thorough research in the literature has shown that even though refractory cases of sporotrichosis are uncommon, they do exist with both itraconazole and SSPI⁵. Recently, Lyra et al. has published an interesting observation reporting on a case of a 25-year-old female patient who was treated with itraconazole for 11 months and then with a combined itraconazole and terbinafine for more than seven months with poor clinical response. As a result, complete remission was achieved only after two months of SSPI inclusion⁵.

Finally, despite the apparently inexistent practical difference between SSPI and itraconazole in the treatment of localized cutaneous sporotrichosis, the authors would like to encourage attending physicians to do more than merely flipping a coin. Instead, ploughing more time into listening to the patients' limitations and explaining in detail the whole treatment process

may be the key for reaching better outcomes. In the authors' experience, SSPI is considered a cost-effective drug for the treatment of localized cutaneous sporotrichosis.

AUTHORS' CONTRIBUTIONS

HDR: Conceptualization, Data curation, Writing – original draft, Writing – review & editing. **ADM:** Conceptualization, Data curation, Writing – original draft, Writing – review & editing. **EVMBF:** Conceptualization, Data curation, Writing – original draft, Writing – review & editing. **ADM:** Conceptualization, Data curation, Writing – original draft, Writing – review & editing. **SLMD:** Conceptualization, Data curation, Writing – original draft, Writing – review & editing. **ACTM:** Data curation, Writing – original draft, Writing – review & editing. **JVCP:** Data curation, Writing – original draft, Writing – review & editing. **PACARC:** Data curation, Writing – original draft, Writing – review & editing.

REFERENCES

1. São Paulo. Secretaria Municipal da Saúde. Vigilância e manejo clínico da esporotricose humana no município de São Paulo. São Paulo: Secretaria Municipal da Saúde; 2020. [cited on May 28, 2021]. p.1-37. Available from: https://docs.bvsalud.org/biblioref/2020/08/1102196/nota-tecnica-09-dve-zoo-2020_esporotricose_v6-alterada-a-pedid_CBJA7E3.pdf
2. Rio de Janeiro. Secretaria de Estado de Saúde do Rio de Janeiro. Boletim Epidemiológico Esporotricose nº 001/2019; 2019. [cited on May 28, 2021]. p.1-6. Available from: <http://www.riocomsaude.rj.gov.br/Publico/MostrarArquivo.aspx?C=qEn%2BgM7lw8A%3D>
3. Bologna JL, Schaffer JV, Lorenzo C. Dermatology. 4th ed. Amsterdã: Elsevier; 2018. 2880 p.
4. Wu JJ, Wolverton SE. Comprehensive dermatologic drug therapy. Amsterdã: Elsevier; 2019. 858 p.
5. Ebihara T, Sugiura M, Masuda M, Nishikawa T. (1991) Successful treatment of sporotrichosis with itraconazole. J Dermatolog Treat. 1991;2(1):31-3. <https://doi.org/10.3109/09546639109089052>

