



## MANAGING TINEA CRURIS DURING PREGNANCY: THERAPEUTIC DILEMMAS AND CLINICAL CONSIDERATIONS

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### ABSTRACT

Tinea cruris (dermatophytic infection of the groin) is a common superficial fungal infection. Increased levels of estrogen and progesterone during pregnancy can affect the immune system and skin homeostasis, creating a favorable environment for the growth of dermatophyte fungi. Its management during pregnancy poses clinical challenges, as the choice of antifungal therapy must balance maternal symptom relief with fetal safety. We report the case of a 21 years old pregnant woman in her third trimester who presented with pruritic, erythematous plaques in the inguinal region, clinically diagnosed as tinea cruris. Laboratory confirmation was achieved through potassium hydroxide (KOH) microscopy and fungal culture with sabaround dextrose agar. Considering gestational safety, topical terbinafine therapy was initiated, and systemic antifungals were avoided. Supportive measures, including hygiene optimization and avoidance of occlusive clothing, were reinforced. Symptomatic relief and lesion resolution were achieved within four weeks without maternal or fetal complications. The case highlights the therapeutic dilemma of managing tinea cruris in pregnancy, where systemic antifungals are often contraindicated. Topical terbinafine remain the mainstay of treatment, with satisfactory efficacy and safety profiles. Clinicians must carefully individualize therapy, prioritizing non-teratogenic options while ensuring effective infection control to prevent recurrence. Topical antifungal therapy is the mainstay of treatment for tinea cruris in pregnancy due to safety concerns with systemic agents. This case demonstrates that terbinafine cream is effective and well tolerated, with complete resolution and no maternal or fetal complications.

Keywords: dermatophytosis; pregnancy; tinea cruris; topical antifungal

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## INTRODUCTION

Superficial dermatomycosis can be caused by three main types of fungi, namely dermatophyte fungi (dermatophytosis), *Candida* species especially *Candida albicans* (cutaneous candidosis), and *Malassezia furfur* (pityriasis versicolor) (Widanty & Budimulja., 2018). Dermatophytosis is an infection of keratin-containing tissues (stratum corneum, hair, nails) caused by *Epidermophyton*, *Microsporum*, and *Trichophyton*. (Craddock & Scieke., 2019 ; Hay & Ashbee., 2016) Until now, dermatophytosis is still commonly found throughout the world and its incidence continues to increase, estimated to affect 25% of the world's population. (Barac A et al., 2024) The incidence recorded in several Indonesian teaching hospitals is around 4.1%–26.4% among all skin disorders. Other contributing factors include poor hygiene, the presence of transmission sources in the surrounding environment, the use of antibiotics, steroids, and cytostatics, as well as chronic and other systemic diseases.(Barac A et al., 2024 ; Adiguna et al., 2013).

Tinea cruris is a dermatophyte fungal infection of the groin, genitals, pubis, perineum, and perianal areas, characterized by annular plaques with active erythematous borders and pruritus. (Craddock & Scieke., 2019 ; Hay & Ashbee., 2016) Pregnancy increases susceptibility to infection due to hormonal changes (estrogen, progesterone) that affect immunity and skin homeostasis.( Craddock & Scieke., 2019 ; Barac A et al.,2024) Management during pregnancy is focused on topical therapy

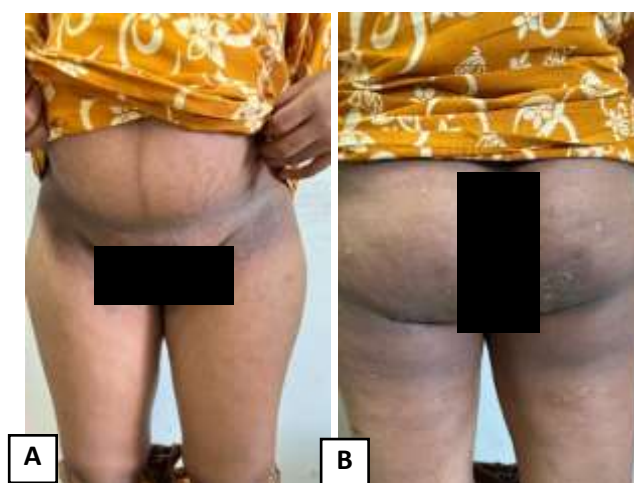
because systemic use is relatively contraindicated. Topical azoles are the first-line choice; however, topical terbinafine has also been reported to be safe during pregnancy with good effectiveness against dermatophytes. This therapy should be combined with hygiene education, keeping the area dry, and avoiding predisposing factors to prevent recurrence. (Craddock & Scieke., 2019 ; Barac A et al.,2024 ; Widanty et al., 2024). The purpose of this case report is to describe the clinical features, diagnostic approach, and therapeutic considerations of tinea cruris in pregnancy, as well as to highlight the role of topical terbinafine as a safe and effective treatment option.

## METHOD

This article is a case report study that presents the diagnostic process, clinical management, and follow-up of a patient with tinea cruris during pregnancy. Data for this case were obtained through anamnesis, physical examination, and supporting investigations including direct microscopic examination with 10% KOH and fungal culture, conducted at Chairuddin Panusunan Lubis Hospital, Medan. Data collection was carried out by documenting the patient's history, clinical findings, and laboratory results in detail throughout the course of the illness. Observations during treatment and follow-up were also systematically recorded. The collected data were analyzed qualitatively and presented in narrative form. This case report expected to provide insights into clinical practice, especially regarding the management of dermatophytosis in pregnant women.

## CASE REPORT

A woman, a housewife, 21 years old, 38 weeks pregnant, came to the Dermatology and Venereology Polyclinic with the main complaint of red spots accompanied by scales and itching in the groin and buttocks since 4 months ago. Initially, small reddish spots appeared in the groin area. Because it was itchy, the patient scratched it and the spots spread to the buttocks. The reddish spots itched more when the patient sweated. The patient had bought over-the-counter topical medication sold in pharmacies, but did not remember the name of the medication. No family members had the same complaint. The patient did not have pets, but there were many stray dogs and cats living in the patient's home environment. On physical examination, the general condition was good, compos mentis consciousness, good nutritional status, body weight 60 kg, height 158 cm, blood pressure 120/90 mmHg, pulse 86 times/minute, respiration 20 times/minute and body temperature 36.7<sup>0</sup> C. On dermatological examination, annular erythematous plaques were found, plaque-sized, well-defined with central healing, multiple, raised edges accompanied by miliary papules and scales in the right and left inguinal and gluteal regions (Figure 1).



**Figure 1.** Annular erythematous plaques, plaque-sized, well-defined with central healing, multiple, raised edges accompanied by miliary papules and scales in the right and left inguinal region (A) and gluteal region (B).

In patients, skin scraping examination was performed using 10% KOH solution to confirm the diagnosis. The results of skin scraping examination with 10% KOH solution found long hyphae, septate, and spores in the right and left inguinal region (Figure 2A) and in the gluteal region (Figure 2B).

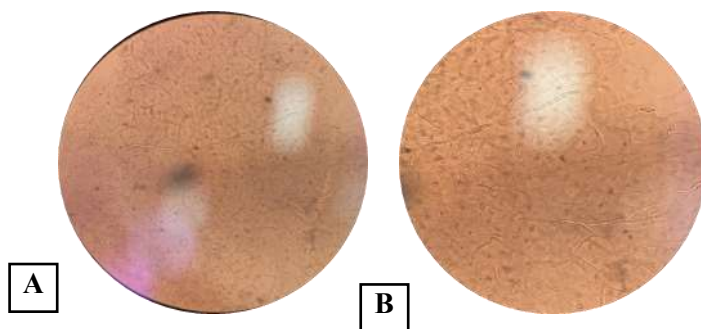


Figure 2. Examination of skin scrapings with 10% KOH solution.

Then, to find out the causative species, a fungal culture examination was carried out on the lesion in the right and left inguinal and gluteal regions. The results of the culture examination on *Sabouraud Dextrose Agar* (SDA) *Epidermophyton floccosum* were found in the right and left inguinal and gluteal areas.

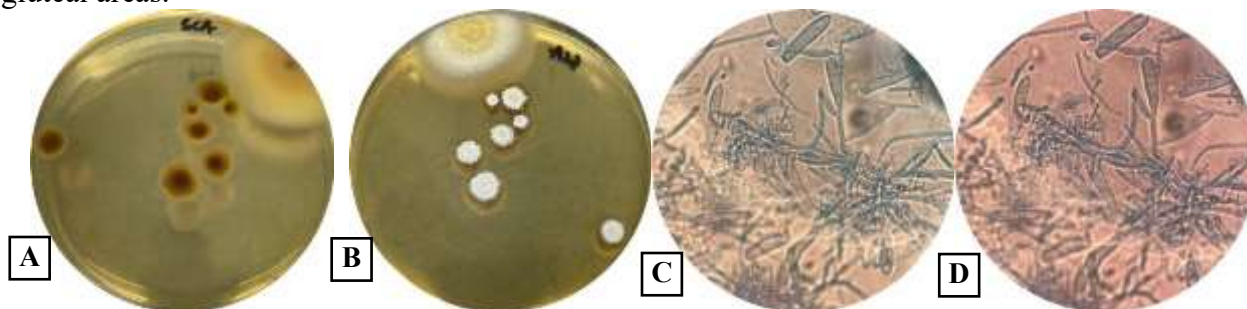


Figure 3. The results of macroscopic culture examination showed a colony surface that was shaped like velvet or powder (A, B) microscopically, club-shaped macroconidia with a smooth wall surface (C, D).

This patient was differentially diagnosed with tinea cruris, erythrasma, and cutaneous candidiasis. The working diagnosis in this patient is tinea cruris. The patient was given terbinafine 1% cream therapy 2 x daily for 2 weeks and cetirizine 10 mg 1 x 1 tablet/day. The patient was given education to maintain personal hygiene and bathe regularly 2 times a day, wear loose clothing that absorbs sweat, avoid using towels or clothes, and use shower soap that is shared with others. After 21 days of therapy, the scaly skin had disappeared and no new lesions appeared. Dermatological examination revealed hyperpigmented macules, multiple, nummular to plaque-sized and squamous in the inguinal region dextra et sinistra and gluteal area (Figure 4). Skin scrapings examined with 10% KOH showed no hyphae or spores (Figure 5). Antifungal therapy was continued until the 28-day (4 weeks) treatment period, but at the next follow-up the patient was unable to attend. She was then instructed to discontinue therapy and was given education via mobile phone. Subsequently, the patient delivered normally without complications. The prognosis for this patient is *quo ad vitam ad bonam, quo ad functionam ad bonam, and quo ad sanationam ad bonam*.

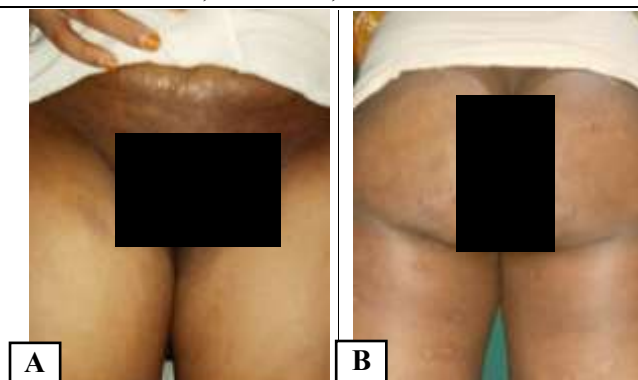


Figure 4. Second control after 21 days of treatment. Hyperpigmentation macules, multiple, nummular to plaque and scale are seen in the inguinal and left inguinal (A) and gluteal (B).



Figure 5. The results of macroscopic culture examination showed no fungal growth, and examination of skin scrapings with 10% KOH solution at follow-up revealed no hyphae or spores.

## DISCUSSION

The diagnosis in this case was based on anamnesis, clinical findings, KOH examination, and fungal culture. The patient, a 21-year-old woman at 38 weeks of pregnancy, presented with red, scaly, and pruritic plaques in the inguinal and gluteal regions. KOH revealed septate hyphae and spores, while culture confirmed *Epidermophyton floccosum*, a dermatophyte that specifically infects skin folds but not hair.(Craddock & Scieke., 2019 ; Hay & Ashbee., 2016 ; Adiguna et al., 2013) Culture remains the gold standard for species identification using Sabouraud dextrose agar with antibiotics to reduce contamination. (Craddock & Scieke., 2019 ) Differential diagnoses included intertriginous candidiasis and erythrasma, which were excluded by clinical and mycological findings. (Janik & Heffernan., 2008 ; Martínez & Franco., 2024)

Pregnancy predisposes women to *tinea cruris* through hormonal changes (estrogen, progesterone), increased sweating and sebum, altered skin pH, and the use of tight clothing.( Craddock & Scieke., 2019; MDPI., 2025 ; Andersson et al., 2020) Management in pregnancy prioritizes topical antifungals, as systemic use is relatively contraindicated.(Craddock & Scieke., 2019 ; Hay R.J ., 2015, Barac et al., 2024) The patient was treated with terbinafine cream 1% twice daily for 2 weeks and cetirizine 10 mg once daily. Terbinafine acts by inhibiting squalene epoxidase, causing toxic accumulation of squalene in fungal cells. While oral terbinafine should be avoided during pregnancy, topical preparations are minimally absorbed (<5%) and considered safe, with no evidence of teratogenicity in animal or limited human studies.(Patel et al., 2017 ; High & fitzpatrick., 2012).

Adjunctive measures included education on hygiene, keeping the area dry, wearing loose cotton clothing, and avoiding the sharing of towels, clothes, or bedding to prevent recurrence and transmission.(Hosthota A., 2018) With appropriate therapy, *tinea cruris* has a good prognosis, though recurrence may occur if re-exposed. (Jacob & Konnikov., 2012) This patient showed clinical improvement, and subsequently delivered normally without complications. The prognosis was *quo ad vitam bonam, quo ad functionam bonam, quo ad sanactionam bonam*.

## CONCLUSION

Tinea cruris during pregnancy requires cautious management because systemic antifungal therapy is relatively contraindicated. In this case, topical terbinafine provided complete clinical and mycological cure without maternal or neonatal complications, demonstrating its safety and efficacy in pregnancy.

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