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## Diagnosis and therapeutic management of elephant skin disease in a geriatric pet with itraconazole pulse therapy

**Selvi D, Kshama MA and Ramesh PT**

### Abstract

A ten year old male pug weighing around 10 kg was presented to Dept. of Veterinary Medicine, Veterinary College, Hebbal, Bengaluru with history of hairfall, severe scratching and malodour from the skin for past twenty days. The dog didn't respond to systemic glucocorticoids. Impression smear collected from the affected site was stained with Loeffler's alkaline methylene blue which revealed 5 budding yeasts/ oil immersion field. Sample collected using sterile swab was utilised for culture. Based on impression smear and culture the case was confirmed as *Malassezia dermatitis* /elephant skin disease. The dog was treated with oral Itraconazole @5mg/kg b.wt, sid, for two consecutive days a week for three weeks along with supportive care following which it made an uneventful recovery. This report confirms the effectiveness of pulse itraconazole in a geriatric patient without adverse effects and ease of administration from owner's point of view.

**Keywords:** Elephant skin disease, geriatric pet, itraconazole

### Introduction

Skin, the largest organ of the body and also a mirror reflection of overall body health which can be affected by endogenous as well as exogenous factors. As the presenting signs in many dermatological conditions are mostly similar, skin diseases are probably the most frustrating and challenging for veterinarians to treat. Among many dermatological conditions, *Malassezia dermatitis* is the most common cutaneous mycotic infection in canines (Bond *et al.*, 2020) [1]. With an altered immune system and due to changes in the micro-environment or defence mechanisms of the skin, these yeasts may become opportunistic pathogens and cause dermatitis through inflammatory or hypersensitivity reactions by the host to yeast antigens or products (Mauldin *et al.*, 1997) [4]. *Malassezia* yeasts remain susceptible to the commonly-used azole drugs such as itraconazole, ketoconazole and miconazole (Velegraki *et al.*, 2004) [8]. Among these azole group of antifungals, Ketoconazole is one of the more commonly used drugs in practice but ketoconazole is hepatotoxic, teratogenic and inhibits testosterone and cortisol production (Nambi, 2002) [5]. Itraconazole is preferred to ketoconazole because of its better tissue penetration, longer elimination half life and lower toxicity (Patterson and Frank, 2002). This article assesses the usefulness of pulse therapy itraconazole in the management of *malassezia dermatitis* in a geriatric patient.

### Case history and clinical observation

A ten year old male pug, weighing around 10 kg was presented to Dept. of Veterinary Medicine, Veterinary College, Bengaluru with a history of hairfall, severe scratching and malodour from the skin for past twenty days. The dog was treated with systemic glucocorticoids but it did not respond to the treatment. On clinical examination the animal had greasy texture of the haircoat, rancid / musty odour, alopecia, hyperpigmentation, hyperkeratinization and lichenification in the ventral aspect of neck, axilla and inguinal region. As *Malassezia dermatitis* causes moderate to intense pruritus, a score of 3 was assigned on a scale of 1-5 for pruritus based on the history, where higher number and lower number represents intense and mild pruritus respectively based on the report of Marsella *et al.*, 2000 [3].

Impression smears were prepared from the affected sites for cytology and culture (sterile swabs) respectively. Impression smears were stained with Loeffler's Alkaline methylene blue for 2-4 minutes and examined under oil immersion (100x). The no. of budding yeasts per field was counted. Sample from the sterile swab was cultured onto Sabouraud's dextrose agar

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supplemented with 0.05% chloramphenicol and cycloheximide each (Kindo *et al.*, 2004)<sup>[2]</sup> and incubated at 30-32 °C for about 7 days (Nunez *et al.*, 2022)<sup>[6]</sup>. Colonies of *Malassezia pachydermatis* in Sabouraud’s dextrose agar appeared pale, convex, smooth, soft and friable.

Diagnosis of *Malassezia pachydermatis* infection was made on the basis of history, clinical signs and cytologic evidence of at least one yeast organism / oil immersion field and culture. The pet was treated with oral itraconazole (5mg/kg/day) for two consecutive days a week for three weeks along with supportive therapy viz Tab. Cefadroxil @ 22 mg/kg b.wt po, bid for 2 weeks and antifungal shampoo twice a week with 15 minutes contact time. Therapeutic evaluation, pre and post treatment was based on cytological evaluation (No. of budding yeasts) and pruritus index score (history), generated on day 0 and day 22.

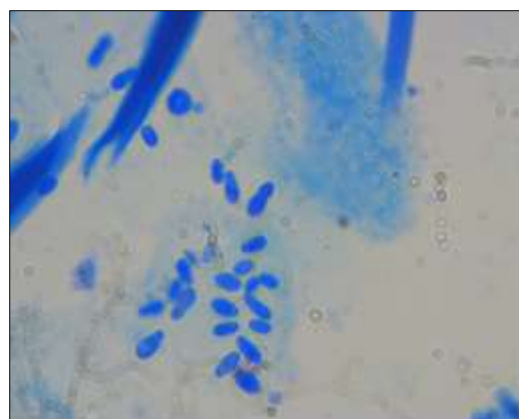
Criteria	Pre treatment 0 day	Post treatment 22 day
SGPT/ ALT (U/L)	22.8	17.1
Creatinine (mg%)	0.8	0.9
Cytology (budding yeasts/ oil immersion field)	6	2
Pruritus	3	1

**Discussion**

This paper reports the successful therapeutic management of elephant skin disease in an aged pug using itraconazole. Post treatment ALT and creatinine values didn’t show any elevation. No of budding yeasts / oil immersion field and pruritus post treatment on day 22 showed reduction when compared with pre treatment on day 0. The pharmacokinetic profile of itraconazole, along with the sustained high concentrations of the drug that develop in the skin following oral administration, suggests that pulse administration (ie, intermittent administration of the drug at the recommended dose with a longer interval between doses than is commonly accepted and could be as efficacious as once daily administration for the treatment of cutaneous *M pachydermatis* infection in dogs. The benefits of pulse administration when compared with daily administration, include decreased potential for side effects and adverse reactions, increased owner compliance, and reduced treatment cost (Pinchbeck *et al.*, 2002)<sup>[7]</sup>.



Post treatment- day 22 With hair growth



Impression smear cytology, Different shapes of yeast (100 X)



Culture Pale, convex, friable Malassezia colonies on SDA



Pre treatment 0 day Erosion, hyperkeratinisation and lichenification

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