

## Original Article

# An open, controlled trial of 10% sulphur-3% salicylic acid soap versus bland soap for the treatment of pityriasis versicolor

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**Abstract** *Background* Medicated soaps are being used increasingly and promoted by pharmaceuticals in different skin diseases including PV.

*Objective* This study was planned to compare the efficacy of Sastid® bar (10% sulfur-3% salicylic acid) and Stie® bar (bland soap) in the treatment of PV.

*Patients and methods* In this open controlled and comparative study conducted at dermatology department CMH, Lahore from February, 2002 to October, 2002, 90 patients of either sex in the age group 14-59 years were enrolled. Diagnosis was confirmed by yellow fluorescence with Wood's lamp and microscopy of scrapings for fungal hyphae and spores. Patients were randomly divided into two groups i.e. group 1 (n=50) used Sastid® bar and group 2 (n=40) applied Stie® bar to take bath twice daily for two weeks. Wood's lamp and microscopic examination was done for presence or absence of fungus at the end of two weeks and ten weeks (follow up period).

*Results* There was rapid initial clearance of PV with Sastid® bar 80% as compared to Stie® bar 11% ( $P<0.001$ ) but relapse rate was as high as 70% at the end of ten weeks.

*Conclusion* Medicated soaps alone are not very effective for treatment of PV but may be used as maintenance or combination with other topical antifungals.

### **Key words**

Pityriasis versicolor, medicate soaps, bland soaps.

## **Introduction**

Pityriasis versicolor (PV) is a common, chronic disease caused by an overgrowth of the yeast fungus called *Pityrosporum ovale* and *P. orbiculare* also called *Malassezia furfur*. *P. ovale* is a member of the normal flora of skin. This causes the person no problems unless it starts to grow excessively.<sup>1,2</sup>

*P. ovale* also plays a role in the development of cradle cap (seborrhoeic dermatitis).<sup>3</sup> Little is known about its etiology but PV is very common in subtropical and tropical parts. It is liable to flourish during the summer in our country. Profuse perspiration and high production of sebum make it easier for the fungus to grow in the skin. Immunodeficiency, for example HIV infection also makes it easier for the fungus to spread.<sup>4,5</sup> It is commonly seen as well-defined, pale-red or brownish, scaly uneven patches which often merge into big blotches looking like maps. It is usually located on the upper part of the back and on

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the chest, but can be found on the entire body. People who suffer from profuse sweating or high production of sebum, for instance teenagers are prone to develop this disease.<sup>1,2</sup> Many other skin diseases, which require a completely different treatment, may mimic PV. So it is very important that the diagnosis is confirmed by identification of fungal spores and hyphae by microscopy and cultivation in the laboratory. *P. ovale* gives yellow-green or red-brown fluorescence when exposed to ultraviolet light (Wood's light examination).<sup>1,2,6</sup>

PV is usually treated with antifungal creams or sprays as clotrimazole, miconazole nitrate, econazole, ketoconazole, ciclopirox, naftifine, terbinafine or Whitfield's ointment.<sup>7-12</sup> The outbreaks may be treated with selenium-sulfide shampoo. The shampoo is applied to the body and removed after thirty minutes, everyday for a week. In severe and resistant cases, treatment with systemic azole antifungal compounds (ketoconazole, itraconazole, fluconazole) is quite effective.<sup>13-16</sup> This treatment should also be followed up by preventive treatments in the subsequent years. Sulfur-salicylic acid shampoos have also been used with success for treatment of PV.<sup>12</sup> Many pharmaceutical companies are promoting some medicated soaps containing sulfur and salicylic acid in treatment of PV. Soaps are easy to apply and are supposed to have good compliance. This study was planned to see the efficacy of 10% sulfur-3% salicylic soap (Sastid® bar) by Stiefel® laboratories as compared to a bland soap (Stie® bar) by same company in the treatment of PV.

### Patients and methods

Study was conducted at Skin Department, Combined Military Hospital, Lahore from February, 2002 to October, 2002. Ninety

patients of PV were studied during 9 months. Diagnosis was made on the basis of history and characteristic skin lesions. It was aided by Wood's light examination and confirmed by direct microscopy of KOH preparation obtained from skin lesion. Wood's light examination revealed yellow fluorescence over lesions showing also the extent of disease on body. For fungal microscopy, scales were scraped from four different diseased sites on glass slides with help of surgical blade. These were treated with 10% KOH and examined under microscope after about 30 minutes which showed characteristic hyphae and spores (spaghetti with meatball appearance).

Patients were randomly divided into two groups. Group 1 included 50 patients who were treated with 10% sulfur 3% salicylic acid soap (Sastid® bar) as follows. Patients were advised to take bath twice daily for 2 weeks by applying the soap on wet body, producing a rich lather and letting it remain on body for 5 minutes before rinsing it off with water. The body was then dried with a fresh towel. Group 2 (control group) patients included 40 patients who were provided with a bland soap (Stie® bar). The method of using the soap was same as for group 1 patients.

Data were collected by examination of patients under Wood's light and examination of the skin scrapings for fungal hyphae from same four sites examined before treatment, at the end of 2 weeks (treatment period) and 10 weeks (follow up period). This study was carried out in the Armed forces personal and therefore has a natural bias in favour of young male preponderance belonging to the lower socioeconomic group. Data was statistically analyzed by using "instat" program. Student's t test was applied to obtain significant/insignificant *p* value.

**Table 1** Summary of results.

	Group 1 (n=50)	Group 2 (n=40)
Male	42	37
Female	8	3
Age	14-59 (36.5±1.4)	29-55 (37.5±1.6)
Lost to follow up	5	4
Cured (After 2 weeks)	36/45 (80%)	4/36 (10%)
Non-responder (After 2 weeks)	9/45 (20%)	32/36 (90%)
Cured (After 10 weeks)	6/20 (30%)(n=20)	0 (n=04)
Non-responder (After 10 weeks)	14 (70%) (n=20)	04 (100%) (n=04)

## Results

In group 1, there were 42 males and 8 females between ages 14 to 59 years (mean age 36.5 years). Out of 50 patients 45 were male and 05 were females. At the end of 2 weeks of therapy, 36 (80%) patients were negative for Wood's lamp fluorescence and scrapings for fungus while 9 (20%) were non responders. After ten weeks 20 patients were available for follow up of which only 6 were negative for microscopy and Wood's lamp examination bringing cure rate to 30% (6/20) and 70%(14/20) relapsed. There was great reduction in fungal load in non responders also.

In group 2 (treated with bland soap), 37 patients were male and 3 were females with ages 20-55 (mean age 37.5 years). At the end of 2 weeks 4 (11.1%) of 36 patients were negative for fungal hyphae and Wood's lamp examination and 32 (88.9%) patients did not respond. After 10 weeks follow up, 4 patients who responded to bland soap also relapsed, bringing failure rate to 100%. All the patients in this group who were positive at the end of 2 weeks did show a significantly reduced load of fungal elements on direct microscopy. Only 2 patients complained of mild irritation of skin in the medicated soap group. The demographic features and results are summarized in **Table 1**.

## Discussion

Pityriasis versicolor is very commonly seen in out patient department of skin in our region. Topical and oral antifungals have been used with success to treat PV but recurrence and relapse remains the problem. Many novel approaches have been tried in the treatment of this disease like sulfur-salicylic acid shampoo and sulfur-salicylic acid soap due to easy in application and probably minimal side effects.<sup>12,17</sup> Many pharmaceutical firms are marketing soaps and claim that sulfur-salicylic acid soaps are quite effective in PV but there are a few international studies on the subject. One such study was done by Charuwitichiratra *et al.*<sup>17</sup> in Thailand and showed effectiveness of these soaps but recently another study from Tanzania did not show significant benefit of another medicated antifungal soap (triclosan soap).<sup>18</sup> In a local study by Muzaffar *et al.*<sup>19</sup> sulfur-salicylic acid soaps were found less effective than topical azole cream in clearing the disease. In our study we found preponderance in young males as expected but extremely high male to female ratio 10:1 was due to the fact that the study was carried out in Armed forces setup having male subjects mainly. Our results were better (80%) when compared with earlier similar study (56%) as far as initial clearance of disease was concerned but relapse rate was also equally high (89%) as against 16.7% in reported study.<sup>17</sup> These differences could possibly be

due to a different setting (Armed Forces personnel) and different racial as well as climatic factors. Part of therapeutic effect can probably be attributed to the detergent effect of soaps, as bland soaps (in control group) were also able to reduce the fungal load. There were no significant side-effects reported in either of the groups except mild irritation by two patients in treatment group. These results in this study are equivalent to the high recurrence rate (60-80%) of disease after topical therapies. Other therapies like oral ketoconazole are highly effective but hepatotoxic as compared to medicated soap. Itraconazole and fluconazole can be used successfully but recurrence remains the problem.<sup>2,11,14-16</sup> Based on our study, we can deduce that sulfur-salicylic acid soaps are effective in initially clearing PV but the relapse rates are quite high. Better results may be achieved if the application regimen is modified, if these soaps are used as maintenance or combination therapy or if these soaps alone are used on a regular basis instead of other soaps.

### Conclusion

Medicated soaps (sulfur-salicylic acid keratolytic soaps) alone are not very effective for treatment of PV. However, these may be used for maintenance therapy or in combination with other topical antifungals.

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