Literature Review of Seborrheic Dermatitis

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ABSTRACT

Background: The prevalence of seborrheic dermatitis in the United States is estimated to be 1 to 3% of the general population and 3 to 5% of young adults. The frequency and severity are at a variance. In some groups of patients, seborrheic dermatitis is common. The theories of the etiology of seborrheic dermatitis vary as well as the treatment methods for this disease.

Objective: To examine the etiology, signs and symptoms, and prognosis of those with seborrheic dermatitis. Also, to compare and contrast treatment protocols using data from clinical trials, research reports, etc.

Data Source: Recent studies of treatment methods in dermatological research journals, and research in defining the disease and its etiology.

Conclusion: The theories of etiology vary; however, there is not one theory that has enough clinical evidence to be supported by the field. Treatments proved to effective in treating seborrheic dermatitis; however, there is no preventive treatment. All treatments reduced the disease once flare-ups occurred.

INTRODUCTION

Seborrheic dermatitis, a skin condition characterized by loose, greasy, or dry, white to yellowish scales, with or without associated reddened skin. It may involve the skin of the scalp, eyebrows, eyelids, nasolabial creases, lips, behind the ears, in the external ear, and the skin of the trunk, particularly over the sternum and along skin folds. The cause is unknown. Seborrheic dermatitis appears to run in families. Stress, fatigue, weather extremes, oily skin, infrequent shampoos or skin cleaning, use of lotions that
contain alcohol, or skin disorders such as acne or obesity may increase the risk. Neurological conditions, including Parkinson’s disease, head injury, and stroke can also be associated with seborrheic dermatitis. Human immunodeficiency virus is also associated with higher incidence. The tendency to develop seborrheic dermatitis appears inherited. The severity can be lessened by controlling the risk factors and by careful attention to skin care. The goal of treatment is to reduce the symptoms. In adults and older children flaking and dryness may be reduced by use of over-the-counter dandruff or medicated shampoos. Shampoos or lotions containing selenium, ketoconazole, or corticosteroids may be prescribed for severe cases. Seborrheic dermatitis may improve in the summer, especially after outdoor activity. It is a chronic condition, controllable with treatment. It often has extended inactive periods followed by flare-ups (Rebora 243).

DISCUSSION

Pityrosporum ovale, a lipophilic yeast of the Malassezia genus, has been implicated in the development of this condition. It has been suggested that seborrheic dermatitis is an inflammatory response to this agent, but that remains to be proved. P. ovale is present on all persons. The P. ovale population is increased at the preferential site of seborrheic dermatitis and a good correlation has been reported often between density of the yeast and clinical severity in seborrheic dermatitis. For example P. ovale makes up 46% of the total micro-flora in normal scalp, 74% in dandruff, and 83% in seborrheic dermatitis. Both topical and systemic antifungal therapies improve seborrheic dermatitis while producing a fall in the P. ovale population, and the reintroduction of the yeast on the treated scalps results in the recurrence of the disease. On the other hand, P.
P. ovale belongs to human skin ecology and is found largely on the scalp of apparently normal subjects and those with seborrheic dermatitis in remission. The large number of P. ovale in dandruff and seborrheic dermatitis may be a consequence of the increased scaling, which provides food and ground for yeasts to grow. There are also cases of seborrheic dermatitis where P. ovale is not present (Johnson 2703).

One case study discussed the relation between skin temperature and location of facial lesions in seborrheic dermatitis. The study showed that the warmer areas of the face were those commonly affected by seborrheic dermatitis. These findings suggest that skin temperature plays a role in the etiology of seborrheic dermatitis. Consistently warm areas included the nasolabial fold, external ear canal, hair-bearing areas of the scalp, and the beard and mustache in subjects who had facial hair. By contrast the cheek, nose, earlobes, and chin were consistently cooler. This occurred in all subjects, regardless of age and sex. There was a striking correlation between the warm areas of the face and the distribution of lesions in seborrheic dermatitis. In patients seborrheic dermatitis cleared in areas that were balding and therefore cooler in temperature. It is thought that the organism P. ovale may grow best at warmer temperatures. Also, areas of the skin that are predisposed to develop seborrheic dermatitis generally have a higher proportion of sebaceous glands, and it may be that these glands are associated with increased cutaneous blood flow and therefore higher skin temperatures (Hale 559).

A second case study was performed to determine the significance, if any, of emotional stress in the pathogenesis of skin problems. They investigated the extent of
psychological or emotional factors involved in the development of skin disorders. In the
study musicians reported that episodes of skin problems coincided with stressful life
events. Emotional triggers especially increased their skin problems. However, the
results showed that there isn’t a strong association between the dermatological lesions
and depression, anxiety, psychological symptoms and stressful life events. Although
there was no statistically significant correlation between stress and dermatological
lesions, the study concluded that skin problems increased with emotional triggers (Onder
261).

Thirty-one percent of HIV-infected asymptomatic patients and up to eighty-three
percent of acquired immune deficiency syndrome patients have seborrheic dermatitis.
Compared to the general population where only three percent of persons are affected with
seborrheic dermatitis. In the AIDS patient’s seborrheic dermatitis is severe with
inflammatory and popular lesions, often involving the face and sparing the scalp. This
contrasts with the usually mild erythematous, scaling plaques on the scalp and face seen
in the general population. The other seborrheic areas of the body are also frequently
affected, with or without head involvement, and are more erythematous and popular than
usual. The exact mechanism whereby human immunodeficiency virus infection
promotes an atypical and explosive onset of seborrheic dermatitis is unknown, but many
factors have been explored, including CD4-positive T lymphocyte counts, P. ovale
density and nutritional factors (Rebora 244).

An influence of the nervous system is probable. Seborrheic dermatitis prevails in
a variety of neurological disorders such as parkinsonism, facial paralysis, unilateral injury to the ganglion of Gasser, syringomyelia, poliomyelitis, and quadriplegia. Lack of cleansing has been regarded as a causative factor in those patients, but more important may be the lack of exposure to daylight because of immobility. This point is shared by other groups of subjects with a high prevalence of seborrheic dermatitis that do not enjoy open air, like inmates of prisons and hospices. It is common observation that emotional and psychogenic factors may precipitate or aggravate the disease. A high rate of seborrheic dermatitis has been found among soldiers in times of war and in coal miners. Farmers, by contrast have a significantly low incidence. Also, psychiatric patients, particularly those with depressive syndromes, frequently suffer from seborrheic dermatitis, irrespective of the intake of psychotropic drugs. Indoor life has been suggested to play an important role in these cases (Rebora 247).

Another population group with a high prevalence of seborrheic dermatitis on the face and scalp are mountain guides. Exposure to UV radiation has immunomodulatory properties. Mountain guides with high sun exposure had lower CD4/CD8 T cell ratios than patients with low sun exposure. Dosimetric studies demonstrated that mountain guides probably have the most extreme occupational exposure to solar UV. Personal UV exposure exceeding 17 minimal erythema doses per/day have been measured. In conclusion, they suggest that the high prevalence of seborrheic dermatitis in mountain guides is at least in part, due to UV-linked immunosuppression (Moehrle 147).

Treatment of seborrheic dermatitis varies depending on the severity of the case.
Hygiene plays a key role in controlling seborrheic dermatitis. Frequent cleansing with soaps removes oils from affected areas and improves seborrhea. Pharmacological treatment options for seborrheic dermatitis include antifungal preparations that decrease colonization by lipophilic yeast and anti-inflammatory agent. Cases involving the scalp may be treated with antidandruff shampoos containing 2.5 percent selenium sulfide or 1 to 2 percent pyrithione zinc are effective treatments. In order to remove scales mineral oil or olive oil may be applied to the scalp followed by washing with dishwashing liquid several hours later. Effective treatments to the face include ketoconazole cream 2 percent may be applied once or twice daily to affected areas. One percent hydrocortisone cream may be applied once or twice daily to reduce itching and erythema. Patients that are unresponsive to topical therapy may be given isotretinoin therapy, which reduces sebaceous gland size by 90%. Isotretinoin also has anti-inflammatory properties. However, isotretinoin has many serious side effects such as teratogenicity, hyperlipidemia, neutropenia, anemia, hepatitis, conjunctivitis, hair loss, and DISH (Johnson 2707-2708).

Another case study discussed the effectiveness of the use of 1% metronidazole, an antibiotic with established efficacy against anaerobic bacteria. Metronidazole also has an anti-inflammatory effect which might have a direct effect on blood vessels. Although the exact mechanism that metronidazole has on seborrheic dermatitis is uncertain, it is believed it is through the anti-inflammatory action metronidazole is effective (Karger 37).

One study visits the evidence that KET shampoos significantly reduce the clinical
manifestations of dandruff and seborrheic dermatitis. There is evidence that KET 2% has significant anti-inflammatory effects; therefore, proved to be effective in seborrheic dermatitis with minimal side effects (Pierard 175).

Another study demonstrated that CIC 1% administered in a cream is effective in treating patients with seborrheic dermatitis of the face. CIC is a hydroxypyridone that has antmyotic activity against P. ovale and has an anti-inflammatory effects. CIC 1% in a cream exhibits good efficacy/tolerance ratio in mild to moderate seborrheic dermatitis (Dupey 144).

CONCLUSION

There are may theories of the etiology of seborrheic dermatitis; however, there is a lack of evidence to back up any one of them. It seems that immunosupression as well as sunlight play a role in those effected. Treatment varies according to severity of the disease ranging from improving personal hygiene to applying corticosteroids, and treatment is not a preventive measure it monitors the disease once there are flare-ups.
Works Cited


