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STUDY TO DETERMINE THE SKIN DISORDERS AMONG PATIENTS ON ORAL CORTICOSTEROIDS

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Abstract:
Introduction: *Corticosteroids revolutionized the treatment of many skin diseases in the fifth and sixth decades of the last century. They have anti-inflammatory, vasoconstrictive, anti-proliferative and immunosuppressive effects.*
Aim: *The aim of the study was to determine the frequency of skin lesions in patients taking oral steroids and to understand the pattern of these changes in our population.*
Material and methods: *The study was conducted in dermatology department of Allied Hospital Faisalabad for six months duration from 1st April 2020 to 30th September 2020. 204 patients who met the inclusion criteria completed the study. All patients were taking 60-80 mg of oral steroids for a minimum of 2 weeks. The results were recorded on a previously prepared pro forma. All relevant investigations were also carried out. The results were then compiled and tabulated.*
Results: *Multiple skin infections was the most common adverse reaction observed in 45 patients (22%, p> 0.10). The face of the moon was visible in 39 patients (19%, p0.08). Atrophic changes occurred in 45 patients (22.5%, p> 0.47). Other symptoms observed in our patients were acne-like eruptions in 18 patients (8.7%, p0.013).*
Conclusion: *Oral steroid therapy is associated with significant cutaneous side effects that are dose and duration dependent. Bacterial infections remain the most common side effect.*
Key words: *oral steroids, infections, atrophy, moon face, buffalo hump.*

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INTRODUCTION:

Corticosteroids revolutionized the treatment of many skin conditions in the fifth and sixth decades of the last century[1-2]. The basic structure of the steroid molecule is the perhydro-cyclopentano-phenanthrene ring. Modifications to the original structure of this ring lead to the formation of steroids of different strength and properties[3-4]. Steroids have anti-inflammatory, vasoconstrictive, anti-proliferative and immunosuppressive effects. The steroids can be administered orally, topically, parenterally or to the lesion. They affect many systems of the human body. Common skin side effects include stretch marks, purpura, telangiectasis, hirsutism, pigmentation disorders, and acne-like eruptions[5-6]. There may be an increased frequency and severity of skin infections such as ringworm, impetigo or scabies. Dermatoses such as acne, rosacea, and psoriasis can be made worse by careless use of steroids. Long-term use of steroids causes the redistribution of adipose tissue[7-8]. This can lead to the face of the moon and the hump of buffaloes with slender limbs. Most of these side effects of steroids are related to the dose and duration of steroid therapy.[9] The aim of the study was to determine the frequency of skin lesions in patients taking oral steroids and to understand the pattern of these changes in our population.

MATERIAL AND METHODS:

The study was conducted in the dermatology department of Allied Hospital Faisalabad for six months duration from 1st April 2020 to 30th September 2020for six months duration from March 2020 to August 2020. The study included patients of both sexes, aged 15 to 60 years. Only those patients who took 60-80 mg of steroids for at least 2 weeks were included in the studies. The study enrolled patients receiving oral prednisolone for the treatment of a variety of underlying diseases such as pemphigus, pemphigus, systemic lupus erythematosus, rheumatoid arthritis, scleroderma, and vasculitis. They were not taking any other medications. After a detailed interview, general, systemic and skin examination, the results were recorded on a previously prepared pro forma. The results were then compiled and tabulated. In addition to routine investigations, appropriate investigations were also carried out where necessary. These included fungal scrapings, culture and sensitivity swabs, a Tzanck smear, and a skin biopsy for histopathological purposes.

RESULTS:

A total of 205 patients completed the study, including 80 men (39%) and 125 women (61%), with a male-to-female ratio of 0.6: 1. Minimum age for reporting was 15 years, maximum age 60 years, and mean age 42.3 years. Table 1 shows the frequency of various skin side effects of oral steroid therapy observed in our patients.

Table 1 Cutaneous side effects of oral steroid therapy (n=205)

Side effect	*n (%)*
Moon face and buffalo hump	56 (27.3)
Infections	45 (22.4)
Atrophic changes	45 (22.4)
Acneiform eruptions	18 (8.7)
Hypertrichosis	8 (4)
Maculopapular eruptions	2 (1)

Among the infections, the most common were bacterial infections in 16 patients (8%, p <0.47), followed by dermatophytic, yeast and viral infections. Bacterial infections were responsible for folliculitis, boils, and carbuncles. Dermatophytosis was observed in 11 patients (5.3%, p> 0.20), including mycosis of the body and lower leg. Candidiasis occurred in 13 patients (6.3%, p <0.05). Herpes simplex and shingles dominated among the viral infections observed in 5 patients (2.4%, p> 1.00). Adipose tissue redistribution was 27.3%. The findings concerned the face of the moon in 39 patients (19%, p <0.001) and the neck of a buffalo in 17 patients (8.3%, p> 0.08). Atrophic skin lesions occurred in 45 patients (22.4%, p> 0.47). The skin showed easy bruising in 14 patients (7%, p> 0.45), atrophy in 12 patients (6%, p> 0.41), purpura in 12 patients (6%, p> 1.00) and stretch marks in 7 patients (3.4%, p> 0.28). Among the various side effects, acne-like eruptions occurred in 18 patients (8.7%, p> 0.18) and hirsutism occurred in 8 patients (4%, p> 0.013).

DISCUSSION:

The basic structure of the steroid molecule is the hydro-cyclopentane phenanthrene ring. They have anti-inflammatory, immunosuppressive and anti-proliferative effects. They have many skin side effects, most of which are related to the dose and

duration of therapy. Most of the patients enrolled experienced side effects at the 60-80 mg dose after a minimum period of 2 weeks. The most common symptom of skin infection in our study was 45 patients (22%, p> 0.10) who were taking oral steroids 60 mg daily for 3 weeks. Stuck et al. reported an incidence of 12.7% of infections in their patients taking oral steroids. The figures given in our study are therefore higher compared to the figures given earlier. Poor hygiene, malnutrition, and relatively old age may explain the difference. Akhter et al. Another study in Punjab showed a high frequency of infections in patients with pemphigus vulgaris using high doses of steroids. The moon face was visible in 39 patients (19%, p <0.001) and the buffalo neck was 17 patients (8.3%, p> 0.08) treated with oral steroids due to the underlying redistribution of adipose tissue. Differences in relative insulin sensitivity in peripheral and terminal adipocytes result in these changes. Moreover, their receptors also respond differently to the lipolytic effects assisted by glucocorticoids. A particular change was observed in our patients earlier, ie after 3 weeks of steroid therapy. Atrophic skin changes were often observed in our patients. World studies have shown that steroids cause atrophic skin changes. Striae distensile observed in (3.4%) of our patients were large and widely distributed on the abdomen and thighs. Evans in his study described the change in 100 patients taking oral steroids. Easy bruising (7%) and purpura (6%) were also observed in our patients. Atrophic changes have occurred in patients taking oral steroids for a minimum of 8 weeks. The figures provided by us are consistent with the previously reported studies. In our study, acne occurred in 8 patients (8.7%, p <0.001). They took oral steroids for at least three weeks. All patients had maculopapular lesions and no come-dones. The underlying pathogenesis of these acne-like eruptions remains unclear; however, steroids do not affect the number of surface bacteria but cause ductal hyperkeratosis. Precious et al. and Samma et al. they revealed similar acne data in their research. Hence, the results of our research are consistent with the literature. The hypertrichosis observed in 8 patients (4%, p> 0.013) was mainly visible on the cheeks and temples of our patients.

CONCLUSION:

Oral steroid therapy has a significant frequency of skin side effects, which depend on the dose and duration of therapy. Cushingoid features and infections remain the most common symptoms.

REFERENCES:

1. Fekete, Gyula László, and László Fekete. "Cutaneous leukocytoclastic vasculitis associated with erlotinib treatment: A case report and review of the literature." *Experimental and Therapeutic Medicine* 17, no. 2 (2019): 1128-1131.
2. Wang, Charlie, Marius Rademaker, Christopher Baker, and Peter Foley. "COVID-19 and the use of immunomodulatory and biologic agents for severe cutaneous disease: An Australian/New Zealand consensus statement." *Australasian Journal of Dermatology* (2020).
3. Wei, Jinlong, Lingbin Meng, Xue Hou, Chao Qu, Bin Wang, Ying Xin, and Xin Jiang. "Radiation-induced skin reactions: mechanism and treatment." *Cancer management and research* 11 (2019): 167.
4. Sirufo, Maria Maddalena, Francesca De Pietro, Enrica Maria Bassino, Lia Ginaldi, and Massimo De Martinis. "Osteoporosis in skin diseases." *International Journal of Molecular Sciences* 21, no. 13 (2020): 4749.
5. Sun, Zheng, Shi Huang, Pengfei Zhu, Feng Yue, Helen Zhao, Ming Yang, Yueqing Niu et al. "A microbiome-based index for assessing skin health and treatment effects for atopic dermatitis in children." *Msystems* 4, no. 4 (2019): e00293-19.
6. Bomar, Leonora, Aditi Senithilnathan, and Christine Ahn. "Systemic therapies for advanced melanoma." *Dermatologic clinics* 37, no. 4 (2019): 409-423.
7. Dai, Christina, Shawn Shih, Ahmed Ansari, Young Kwak, and Naveed Sami. "Biologic therapy in the treatment of cutaneous sarcoidosis: a literature review." *American Journal of Clinical Dermatology* (2019): 1-14.
8. Sharma, Ajay N., Natasha A. Mesinkovska, and Taraneh Paravar. "Characterizing the adverse dermatologic effects of hydroxychloroquine: a systematic review." *Journal of the American Academy of Dermatology* (2020).
9. Johnson, Daniel, Anisha B. Patel, Marc I. Uemura, Van A. Trinh, Natalie Jackson, Chrystia M. Zobniw, Michael T. Tetzlaff, Patrick Hwu, Jonathan L. Curry, and Adi Diab. "IL17A blockade successfully treated psoriasiform dermatologic toxicity from immunotherapy." *Cancer Immunology Research* 7, no. 6 (2019): 860-865.
10. Thandar, Yasmeen, Rivesh Maharajh, Firoza Haffejee, and Anisa Mosam. "Treatment of cutaneous lichen planus (part 2): a review of systemic therapies." *Journal of Dermatological Treatment* 30, no. 7 (2019): 633-647.
11. Pegoraro, Natháli Schopf, Camila Camponogara, Mailine Gehrcke, Laura Minussi Giuliani, Dariane Trivisiol da Silva, Luana Haselein

Maurer, Priscilla Dias, Tatiana Emanuelli, Letícia Cruz, and Sara Marchesan Oliveira. "Oleic acid-containing semisolid dosage forms exhibit in vivo anti-inflammatory effect via glucocorticoid receptor in a UVB radiation-induced skin inflammation model." *Inflammopharmacology* 28, no. 3 (2020): 773-786.

12. Taudorf, E. H., G. B. E. Jemec, R. J. Hay, and D. M. L. Saunte. "Cutaneous candidiasis–an evidence-based review of topical and systemic treatments to inform clinical practice." *Journal of the European Academy of Dermatology and Venereology* 33, no. 10 (2019): 1863-1873.
13. Ungureanu, Loredana, Rodica Cosgarea, Mihail Alexandru Badea, Alina Florentina Vasilovici, Ioana Cosgarea, and Simona Corina Șenilă. "Cutaneous manifestations in inflammatory bowel disease." *Experimental and Therapeutic Medicine* 20, no. 1 (2020): 31-37.
14. Eyerich, Stefanie, Martin Metz, Apostolos Bossios, and Kilian Eyerich. "New biological treatments for asthma and skin allergies." *Allergy* 75, no. 3 (2020): 546-560.
15. Barrios, D. M., G. S. Phillips, A. Freites-Martinez, M. Hsu, K. Ciccolini, A. Skripnik Lucas, M. A. Marchetti et al. "Outpatient dermatology consultations for oncology patients with acute dermatologic adverse events impact anticancer therapy interruption: a retrospective study." *Journal of the European Academy of Dermatology and Venereology* (2020).