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Original Research Article

ASSESSMENT OF INFECTION RISK IN OLDER PATIENTS WITH PSORIASIS ON SYSTEMIC THERAPY

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Abstract: *Systemic treatment for psoriasis can be effective but have more risk of infection especially in old age groups. The aim of this study is to assess the infection risk in older patients with psoriasis on systemic therapy. A total of 639 patients were included in the study those were taking systemic therapy for psoriasis for last 6 months. They were divided into two groups. Group A with younger patients whereas the Group B had the older patients. Data was gathered and analyzed. Both groups were compared with respect to the incidence of infection. The results showed that that the group B had significantly high frequency of infection compared to the Group A. In conclusion, the assessment of infection risk in older patients with psoriasis who are receiving systemic therapies is crucial to ensure that patients receive the most appropriate and effective treatment while minimizing the risk of infections and other adverse events.*

Keywords: Psoriasis, systemic treatment, infection, old age, phototherapy, tropical treatment

Introduction

Psoriasis is a chronic autoimmune skin condition that affects millions of people worldwide. It is characterized by raised, scaly, and often itchy patches on the skin, which can cause significant physical and psychological distress for patients (Singh et al., 2020). The incidence of psoriasis varies globally, with an estimated prevalence of 2-3% in the general population. In Pakistan, the incidence rate of psoriasis is reported to be between 0.44% to 4.78% (Lu et al., 2013).

There are several treatment options available for psoriasis, including topical creams, phototherapy, and systemic therapies. Topical treatments are usually used for mild-to-moderate cases, while systemic therapies are reserved for more severe cases that are unresponsive to other treatments. Systemic treatment options for psoriasis include oral medications such as methotrexate, cyclosporine, and acitretin, as well as biologic agents such as tumor necrosis factor inhibitors and interleukin inhibitors (Hong et al., 2021).

While systemic therapies can be effective in managing psoriasis, they also carry a risk of infection, particularly in older patients. As people age, their immune system becomes less efficient, making them more vulnerable to infections (Fagni et al., 2021). The use of systemic treatments in older patients with psoriasis can increase the risk of infections, including bacterial, viral, and fungal infections. This can lead to serious complications and even mortality in some cases (Lazar et al., 2018).

Therefore, it is essential to assess the infection risk in older patients with psoriasis who are receiving systemic therapies. This assessment can help healthcare providers make informed decisions about treatment options, including the use of prophylactic antibiotics or other measures to reduce the risk of infection. The rationale for this assessment is to ensure that older patients with psoriasis receive the most appropriate and effective treatment while minimizing the risk of infections and other adverse events. The aim of the current study is to assess the infection risk in older patients with psoriasis on systemic therapy.

Methodology

This current case and control study was conducted at the department of dermatology Jinnah hospital and Gulab devi hospital, Lahore from September 2021 to January 2022. A total of 639 diagnosed cases of psoriasis, both male and female who were on systemic treatment for at least 6 months were included in the study. The patients were divided into two groups. Group A had patients with the age group 15-40 years

and group B with the age group 60 years and above. The demographic, co morbid condition, history of systemic treatment for psoriasis, and type of infections were noted six months after the start of medication. This study was approved by the ethical committee of both hospitals and as it was a descriptive study that included no intervention as the consent from the participants was waived off. The data was gathered and was analyzed by using SPSS software. The normally distributed continuous data was presented as mean and standard deviation and were compared by using independent t test. The p value of less than 0.05 was considered as significant.

Results

A total of 639 patients were analyzed in this study. Group A had 307 (48%) patients and group B had 332 (52%) patients.42.5% were the male in group A and 44.4% in group B. The comparison of co morbid conditions is shown in table 1. Respiratory and Cardiovascular diseases are more prevalent in the study population followed by osteoarthritis and diabetes mellitus. Group B had more comorbid condition as compared to Group A as depicted by the significant p value in table 1. History of vaccination and previous viral infections also taken and compared between the groups. In group B significant greater number of patients had had influenza vaccine shots compared to group A (p=0.001), whereas vaccine for pneumonia and herpes zoster showed non-significant difference between the groups (p= 0.09 and 0.07 respectively). The 28% (n=179) was given methotrexate and 26% were taking cyclosporine. The other systemic drugs are shown in figure 1. After six months of treatment with systemic drugs treatment we gather the data of infections in both groups and compared with each other. The results showed a significantly greater number of infections in older population (Group B) on systemic treatment for psoriasis compared to the younger population (table 2).

Table-1 Demographic characteristics of groups:

Characteristic	Group A 15-40 years (n=307)	Percentage (48%)	Group B 60 years and above (n=332)	Percentage (52%)	P-value
Age in years Mean (SD)	29.6 (10.6)		68 (7.8)		
Male sex, n (%)	130	42.5	147	44.4	0.33
Asthma/COPD, n (%)	46	14.9	47	14.1	0.21
Cardiovascular disease, n (%)	20	6.5	26	7.9	0.02
Chronic kidney disease, n (%)	4	1.2	6	1.9	0.05
Congestive heart failure, n (%)	3	1.0	6	1.8	0.001
Diabetes types 1 and 2, n (%)	13	4.1	21	6.4	0.004
Inflammatory bowel disease, n (%)	3	1.1	6	1.9	0.012
Osteoarthritis, n (%)	25	8.2	36	10.9	0.03
History of inhaling systemic corticosteroids within 60 days before starting date, n (%)	19	6.1	29	8.8	0.04
Influenza vaccine, n (%)	78	25.4	115	34.5	0.001
Pneumonia vaccine, n (%)	35	11.3	48	14.6	0.67
Herpes zoster vaccine, n (%)	4	1.2	2	0.5	0.09
Infection within 30 days before starting date, n (%)	5	1.5	14	4.2	0.07
History of herpes zoster, n (%)	12	4.0	11	3.2	0.011

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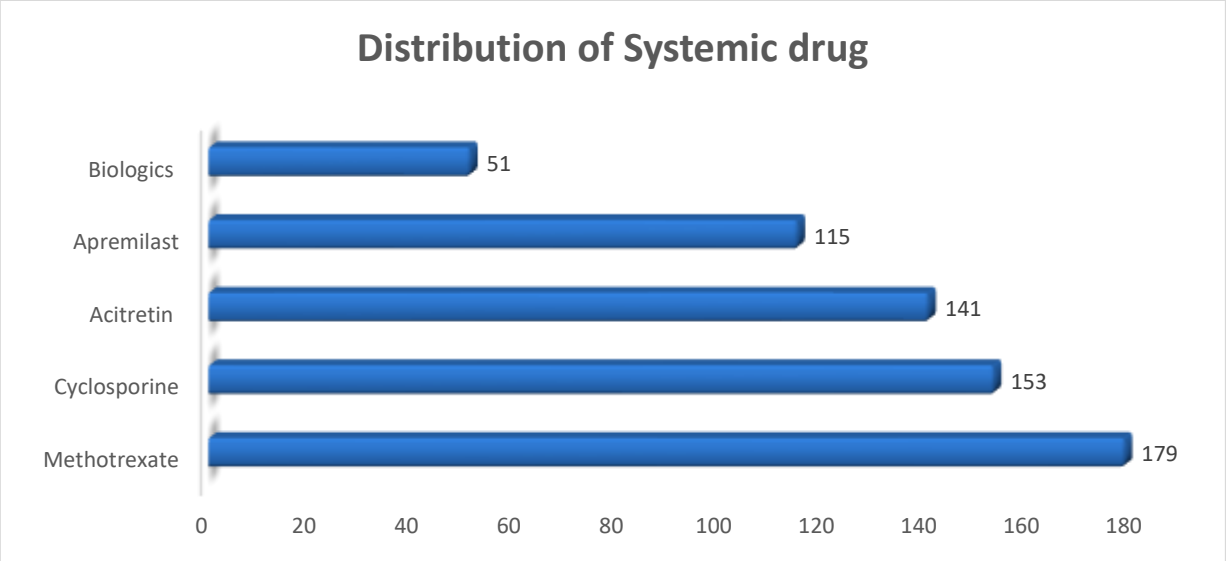

Figure 1: Distribution of systemic treatment in our study population:

Table. II Distribution of disease among the cause of death

Types of infections	Group A (n=307)	%	Group B (n=332)	%	P-value
Lower respiratory tract	6	2.1	20	6.1	0.001
Skin and soft tissue	11	3.6	24	7.2	0.0004
Upper respiratory tract	13	4.2	30	8.9	0.002
Urinary tract	22	7.1	50	15.2	0.04
Conjunctivitis	6	2.1	27	8.1	0.003
Gastrointestinal	6	1.8	31	9.2	0.01
Sepsis	13	4.1	60	18.1	0.04
Cholecystitis/cholangitis	4	1.2	14	4.2	0.009
Abdominal abscess	11	3.6	22	6.6	0.001
Septic arthritis	16	5.2	28	8.4	0.006
Osteomyelitis	13	4.1	30	9.1	0.012
Breast abscess	3	1	6	1.8	0.024
Endocarditis	13	4.1	30	9.1	0.033
Prostatitis	6	2.1	56	16.9	0.002
Central nervous system abscess	3	1.1	7	2.1	0.005

Discussion

Psoriasis is a chronic autoimmune skin condition that can have a significant impact on a patient's quality of life (Nowowiejska et al., 2022). While there are several treatment options available, including topical creams, phototherapy, and systemic therapies, it is essential to carefully evaluate the risk of infection in older patients with psoriasis who are receiving systemic treatments (Martin et al., 2019).

As people age, their immune system becomes less efficient, making them more vulnerable to infections. Our results showed that the old patients on systemic treatment for psoriasis had more infections than the younger population. These results are similar to the other studies done on this topic. The use of systemic treatments in older patients with psoriasis can increase

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the risk of infections, including bacterial, viral, and fungal infections (Amatore et al., 2019; Bakirtzi et al., 2022). These infections can be serious and may lead to complications, hospitalizations, and even death (Her and Kavanaugh, 2016).

It is therefore crucial to assess the risk of infection in older patients with psoriasis who are receiving systemic treatments. This assessment can help healthcare providers make informed decisions about treatment options, including the use of prophylactic antibiotics or other measures to reduce the risk of infection (Mahil et al., 2021).

In addition to assessing the risk of infection, it is also essential to consider the comparative effectiveness of different treatment options for psoriasis. While systemic therapies can be effective in managing psoriasis, they are associated with a higher risk of adverse events, including infections, compared to topical treatments or phototherapy (Gelfand et al., 2012). Therefore, the benefits and risks of each treatment option should be carefully evaluated on a case-by-case basis.

It is important to note that not all older patients with psoriasis who receive systemic therapies will develop infections. However, healthcare providers should remain vigilant for signs and symptoms of infection and take prompt action if an infection is suspected (Langley et al., 2005). This may include performing diagnostic tests, initiating appropriate treatment, and considering discontinuation or modification of the systemic therapy.

Our study has some limitations as well. The confounder's factors such as difference in co morbid conditions are there in our data set. And older patients also have week immune system and are more prone to infections.

Conclusion

In conclusion, the assessment of infection risk in older patients with psoriasis who are receiving systemic therapies is crucial to ensure that patients receive the most appropriate and effective treatment while minimizing the risk of infections and other adverse events. This assessment should be performed on a case-by-case basis, considering the patient's age, comorbidities, and other risk factors for infection. Healthcare providers should remain vigilant for signs and symptoms of infection and take prompt action if an infection is suspected.

Conflict of interest

The authors declared an absence of conflict of interest.

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