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Perspective

Study of Initial Cohort Infections in Patients With Diagnosed Systemic Lupus Erythematosus

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DESCRIPTION

SLE is a multisystemic autoimmune disease that causes severe morbidity and mortality. A bidirectional pattern of life threatening has been well-conceived, with early fatalities (one year) most typically due to active SLE or infection, and late deaths primarily due to atherosclerotic vascular disease. Indeed, in multiple SLE cohorts, short disease duration (one year) has been found to be a separate risk factor for infections. Infections are commonly thought to be a consequence of immunosuppressive therapy in SLE patients; nevertheless, as many as 25.9% of serious infections are documented at the point of SLE identification regardless of immunosuppressive treatment.

The high rate of serious illness in newly diagnosed SLE suggests that infections are caused by glucocorticoid and immunosuppressive medication, and may be related to SLE's underlying immunological dysfunctional behaviour. According to a recent Canadian community-based study, the frequency of serious illnesses and infection-related fatalities increased by 82% and 61%, correspondingly, in newly diagnosed SLE patients compared to a matched non-SLE group. In a Spanish inception cohort of 282 newly diagnosed SLE patients, 19 patients (6.4%) had significant infections throughout the first year of follow-up; high initial SLE activity and prednisolone doses >30 mg/day during the initial thirty days have been linked with a higher risk of infections. An observational inception cohort of Chinese patients with recently diagnosed SLE (3 months) from the clinic was used to characterise severe infection events within the first year of follow-up and to develop a risk assessment tool for infection prediction.

During the first year of follow-up, the current analysis found a considerable prevalence of serious infections (14% in hospitalized patients with newly diagnosed SLE). It is important to note that severe infection was associated with all-cause death and that 94% of episodes occurred within the first four months of recruitment.

Based on the SLEDAI score, blood lymphocyte count, and serum creatinine levels measured at the beginning, we developed a data-driven risk model to predict the incidence of severe infection in this group within the first four months. It is recognised that immunosuppressive drugs or disease activity enhance the likelihood of infection in SLE patients

The SLE disease activity index, a key factor in predicting severe infections, did, however, appear to outperform glucocorticoid and immunosuppressive medication in our hSLIC cohort. The findings imply that immune function impairment caused by SLE is more likely to be the cause of the vulnerability to infection among newly diagnosed SLE patients. According to our findings, significant infection is a severe complication with a high prognostic implication in the early (4 months) period of hospitalisation for people with newly diagnosed SLE.

Using the risk prediction technique, high-risk patients may be located. Furthermore, our hSLIC infection profile showed that lung, blood, skin, and soft tissue infections were most common there. Similar to this, bacterial, fungal, and viral infections were the top three pathogens. As a result, prompt infection detection and empirical antibiotic therapy may be a sensible course of action for high-risk individuals. The use of preventive antibiotics, such as trimethoprim-sulfamethoxazole for *P. jirovecii* infection, and appropriate vaccination, such as the recombinant zoster vaccine, are essential parts of the approach to lower the risk of severe infections.

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