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LETTER TO THE EDITOR

Infection mitigation a necessity in lupus patients

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There are higher infection-related mortalities in Asian systemic lupus erythematosus (SLE) patients as compared to cardiovascular complications and malignancies seen in the Caucasian population [1]. However, literature evaluating infection characteristics and outcomes in Asian SLE patients is limited; hence, we read with great interest Teh et al.'s paper which highlights the significant morbidity of infections in this cohort [2]. We previously published a retrospective study evaluating the characteristics and outcomes of hospitalized lupus nephritis (LN) patients with infections [3]. In comparison to the author's paper which involved SLE patients (64.8% had renal involvement), we found more deaths and infections among LN as compared to SLE patients which were consistent with findings from previous studies [4, 5]. There were 21 deaths (11.2%) in the author's cohort of 125 SLE patients with infections, with a higher proportion of LN among those with infection-related deaths (80.9% vs 63.5%). We had 11 deaths (23.9%) in 46 LN patients with infection-related hospital admissions and 6 deaths (13%) were infection-related.

The infection episode rate was 40.9 per 100 patient years in our LN cohort which was higher compared to 26.3 infections per 100 patient years in the author's paper. In both studies, pulmonary infection was the most common infection and gram negative bacteria were more commonly identified with Pseudomonas being the most common gram negative organism in our study versus salmonella in Teh et al. Interestingly, cytomegalovirus (CMV) was the most commonly identified virus in our study as compared to herpes zoster in the author's paper.

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The differences in characteristics of infections in our cohort likely reflect the differences in immunosuppressive therapy that LN patients were exposed to as compared to SLE patients. In our study, 37% of patients received pulsed methylprednisolone as compared to 15.5% in the author's study. In addition, 26.1% of the patients received cyclophosphamide while only 10.7% of patients in the author's cohort were exposed to cyclophosphamide. There were also 15.2% of patients who received Rituximab in our cohort while Rituximab use was not mentioned in Teh et al.'s paper. Other than differences in immunosuppressive regimen, differing socioeconomic factors and ethnicity composition could also account for the differences in infection characteristics in these two papers. In addition, chronic kidney disease in LN patients also confers an immuno-deficient state [6], increasing susceptibility to infections as compared to SLE patients, contributing to higher infection rates in our paper.

Steroid minimization regimens with rigid steroid taper targeting doses as low as 2.5 mg by 12 weeks in the AURA trial or low dose steroid regimen (0.5 mg/kg) in MYLUPUS can reduce steroid exposure and minimize infection risk [7]. Currently, biologics such as Rituximab have also been used in steroid avoidance protocols in addition to treatment of refractory disease [8]. Furthermore, patient education with emphasis toward hand hygiene, exercising precautionary measures during travel, avoidance of ill contacts, and vigilance toward development of infective symptoms can help reduce infections. Screening for latent infections such as tuberculosis in endemic areas and timely vaccinations can also mitigate infection risk [9]. As pulmonary infections are the most common infection in SLE patients, studies evaluating the role of influenza and pneumococcal vaccination in reducing infection-related hospital admissions should be performed. There should also be consideration for CMV prophylaxis or surveillance given its high incidence in LN and other glomerulonephritis treated with potent immunosuppressant [10]. Besides, prescription of hydroxychloroquine can prevent infections in lupus patients via immunomodulatory effects [9]. In conclusion, our studies have highlighted the significant morbidity of

infections in lupus patients and the need for a multi prong approach targeting immunosuppressant use, patient education, and preventive measures to reduce infections in these patients.

Compliance with ethical standards

Disclosures Jason Choo has served on Advisory Boards for Novartis and Pfizer with donation of honorarium to Singapore General Hospital to support research and education.

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