Which SLE patients have better survival in ICU?

Parto Siavosh[1], Mohammad Nejadhosseinian[1], Amir Kasaeian[2,3,4], Mohammad Mousavi[5], Jafar Al-sadiq Faraj[1], Ali Heidarzadeh[1], Mohammad Ali Mozaffari[6], and Seyedeh Tahereh Faezi[1]

1. Rheumatology Research center, Tehran University of Medical Sciences, Tehran, Iran. 2. Hematology, Oncology and Stem Cell Transplantation Research Center, Research Institute for Oncology, Hematology and Cell Therapy, Tehran University of Medical Sciences, Tehran, Iran.3. Digestive Diseases Research Center, Digestive Diseases Research Institute, Tehran University of Medical Sciences, Tehran, Iran.4. Inflammation Research Center, Tehran University of Medical Sciences, Tehran, Iran.5. Internal medicine department, Hajar Hospital, Shahrekord University of Medical Sciences, Shahrekord, Iran. 6. Division of Plastic Surgery, Yale School of Medicine, New Haven, CT, USA.
Contact: tfaezi@sina.tums.ac.ir

Introduction

- Systemic lupus erythematosus (SLE), is a chronic autoimmune disease that affects many organs in the body_with varying course and prognosis. This disease is characterized by multi-organ involvement and various complications. During the past decades there has been multiple studies on the course and prognosis of SLE and with the new emerging therapies and medications, survival and mortality rates have changed respectively.

- While factors that contribute to mortality are mostly disease-related, other factors, such as genetic background, environment, cultural beliefs, smoking, alcohol abuse, education level, socioeconomic status, delay in seeking medical advice and compliance with treatment are also noteworthy. Hence the discrepancies in the mortality rates of the same group of diseases observed in different geographic areas are explicable.

- Despite the increase of short and medium-term survival, patients with SLE continue to have a poor long-term prognosis. A number of studies have addressed the characteristics of severe systemic lupus erythematosus in patients admitted to the intensive care unit, suggesting that severe form of SLE is one of the leading causes of mortality and a predictor of poor long-term outcome.

- In this study we aimed to assess the survival and recurrence rates following discharge from hospital in patients with severe SLE admitted to Shariati hospital ICU in a 10- year period.

Methods

- This research is a historical cohort study on all patients with SLE admitted to the intensive care unit of Shariati hospital between April 1st 2009 and April 1st 2019. Fifty- four case files were enrolled in this study.

- Our study endpoints were patients' mortality (death occurred between the time of discharge and the time of follow up phone call) and the recurrence (flare-up) of SLE symptoms.

- Results were presented as mean ± standard deviation (SD) for quantitative variables and were summarized by frequency (percentage) for categorical variables. We compared continuous variables using T-test or Mann-Whitney test any time the data did not have normal distribution or when the assumption of equal variances was violated across the study groups.

- To assess the overall survival (OS) and recurrence-free survival of the patients, the Kaplan-Mayer survival analysis was executed. P values of ≤ 0.05 were considered statistically significant.

Results

- The mean age of patients was 35.24 and 90.7% were female. All patients admitted to ICU had a mean stay of 29 days. Overall survival rate was 52.70%. Mean duration between diagnosis and ICU admission was 4.5 years. The most common cause of admission was flare up (89.1%), while the most common causes of death were sepsis (89.1%) and septic shock (91.7%). The most administered medications were mycophenolate mofetil (98%) followed by rituximab (95.7%). The most common comorbidity in our patients was infection. The most common infection was pneumonia (7.3%).

- mortality rate was higher in female patients in compare to male patients. Mean age in the non- survivors were lower than the survivors (p value= 0.026). The use of hydroxychloroquine, Captopril and Losartan was significantly higher in survived patients (p values= 0.035 and 0.012 respectively). Some lab values in survivors versus non-survivors differed significantly, including: thrombocytopenia (p value= 0.005), low C3 (p value= 0.012), low C4 (p value= 0.021) and high creatinine (p value= 0.028).
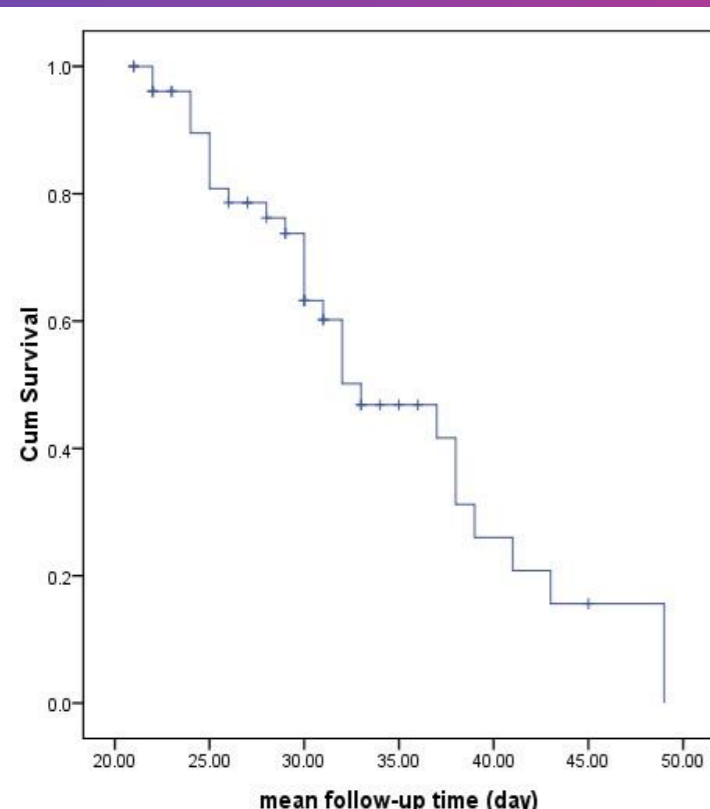
Figures

Figure 1. Kaplan-Mayer survival curve for assessing the survival of patients suffering SLE
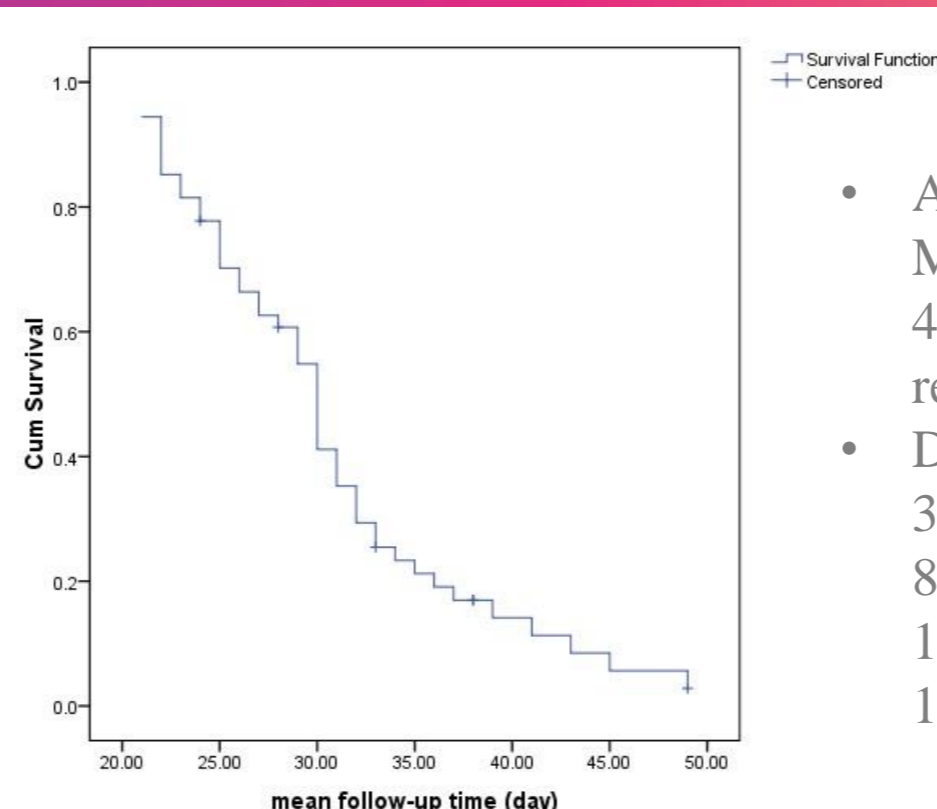

Figure 2. Kaplan-Mayer survival curve for assessing the flare-free survival of patients suffering SLE

- Assessing patients' survival rate using the Kaplan-Mayer analysis (Figure 1) showed the 15, 30, and 45-day survival rate of 96.1%, 63.2%, and 15.6% respectively.

- During our follow-up time (mean follow up time= 30 days), the occurrence of flare up was revealed in 89.1% of patients. The survival analysis showed 15, 30, and 45-day recurrence-free survival of 100%, 54.8%, and 5.7% respectively (Figure 2).