A325 - Prognostic role of neutrophil lymphocyte ratio (nlr) in critical illness

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Introduction:
Neutrophil-to-lymphocyte ratio (NLR) has been used to predict patient outcomes, with higher values linked to negative prognosis [1]. However, most studies investigate NLR on admission to Critical Care only [2]. In this study we analysed NLR values and trends over a 7-day observation period to define different time courses in survivors and non-survivors of critical illness.

Methods:
This retrospective study included Intensive Care Unit (ICU) patients admitted to the Royal Liverpool University Hospital over a 4-year period. Age, gender, sepsis status (type of sepsis and date of sepsis), length of ICU stay, 28-day mortality and ICU outcome were collected. WCC, lymphocytes and neutrophils values were recorded for the first 7 days after ICU admission. NLR values were calculated for the first 7 days of intensive care admission. Patients with haematological malignancies and readmissions were excluded.

Results:
Data were available for 542 patients. 28-day mortality was 20.3% and ICU mortality was 16.6%. Mean NLR in survivors decreased over the 7-day period, whereas mean NLR in non-survivors remained high throughout the 7-day period. Comparing the mean NLR value of the first 2 days (days 1 and 2) with the mean NLR value of the last 2 days (days 6 and 7), patients were divided into 3 groups: decreasing, stable and increasing NLR. The 28-day mortality was respectively 12,4%, 29,9% and 37,8% (P value < 0,01) and the ICU mortality was 9,7%, 24,8% and 32,4% (P-value < 0,01).

Conclusion:
NLR trend over the first 7 days correlates with mortality in ICU, differing significantly between survivors and non-survivors, and could be used as an outcome predictor.

References: