Abstract

Study Objective: to evaluate serum total cholesterol and serum C-reactive protein as a prognostic factor for survival in patients with severe sepsis.

Design: Prospective observational study.

Setting: Cairo University hospital, Critical Care Department.

Patients: The study population consisted of 40 patients (age range, 18-75 years; median, 56 years; men/women ratio, 2:3) in whom severe sepsis was diagnosed.

Interventions: Patients' serum levels of total cholesterol and C-reactive protein were measured upon admission to an intensive care unit, two days later, and seven days later.

Measurements and Main Results: Total cholesterol levels were significantly lower among the non-surviving patients (day 0, 94.48 ± 21.13 mg/dL; day 2, 80.57 ± 19.23 mg/dL; day 7, 61.43 ± 15.119 mg/dL) than surviving patients (day 0, 171.29 ± 30.9 mg/dL [P = 0.000]; day 2, 170.0 ± 26.177 mg/dL [P = 0.000]; day 7, 173.40 ± 33.22 mg/dL [P = 0.000]). C-reactive protein levels were significantly higher among the non-survivors (day 0, 133.0 ± 43.698 mg/dL; day 2, 156.13 ± 43.547 mg/dL; day 7, 192.07 ± 35.761 mg/dL) than survivors (day 0, 70.18 ± 40.167 mg/dL; day 2, 68.47 ± 29.462 mg/dL; day 7, 51.93 ± 23.623 mg/dL; P = 0.000). APACHE II and SOFA scores were significantly higher in the non-survivor group.

Conclusion: Serum cholesterol and C-reactive protein can be used as markers for predicting survival in patients with severe sepsis. Low cholesterol and high C-reactive protein levels appear as a valuable tool for individual risk assessment in severe sepsis patients and for stratification of high-risk patients in future intervention trials.

Keywords: Cholesterol; C-reactive protein; Prognostic factor; Severe sepsis