ABSTRACT

Background: A short term high intensity Atorvastatin(80mg/day in the morning for 4 consecutive days) has been proposed as a promising adjunctive therapy in early sepsis.

Objectives: To determine efficacy and safety of the new regimen of Atorvastatin as an adjunctive line of treatment in early sepsis as well as its effect on endothelial function and in modifying the inflammatory markers.

Methods: A total of 50 patients with early sepsis were alternatively randomized to statin group[25 patients] and received (Atorvastatin 80mg/day for 4 consecutive days, plus conventional sepsis treatment) or control group[25 patients] and received only conventional sepsis treatment and followed by:

- Inflammatory markers(CRP and PCT).
- Nitric oxide metabolites.
- Severity of illness as indicated by SOFA score monitoring and need for organ supportive measures.
- Length of ICU stay, 28 day mortality, and final outcome.
- ALT, AST, and CPK to assure the safety of statins in early sepsis.

Results:

- The mean level of CRP and PCT at day 4 significantly reduced in statin group than in control group (P value=0.007,0.001 respectively).
- The mean level of Nox metabolites at day 4 nonsignificantly reduced in statin group compared to control group(P value=0.063).
- The short term high intensity Atorvastatin therapy reduce nonsignificantly the total cholesterol level at day 4 (P value=0.1).
- The short term high intensity Atorvastatin therapy significantly reduce the development of severe sepsis as indicated by reduction of Mean SOFA score and Highest SOFA score; (p value=0.038 and 0.043 respectively).
- The short term high intensity Atorvastatin therapy significantly reduce the need for vasopressor use in the course of sepsis (P value=0.001), and also reduce the need for mechanical ventilation (P value=0.044).
- The short term high intensity Atorvastatin therapy nonsignificantly reduce the length of ICU stay (P value=0.25);and 28 day mortality (P value=0.26).
- The short term high intensity Atorvastatin therapy are safe to be used in early sepsis regarding their effect on liver and muscle enzymes.

Conclusion: The use of a short term high intensity Atorvastatin therapy in patients with early sepsis seems to be safe and associated with promising effects on inflammatory cascade, and endothelial function; as reflected clinically by its effect on clinical course and mortality from sepsis.

Key words:Atorvastatin, Early sepsis, CRP, PCT, Nox metabolites.