Introduction

Despite improved neonatal care over the past decades, infections remain common and sometimes life-threatening in neonates admitted to the neonatal intensive care unit (NICU) ***(Stoll et al., 2005)***.

Early-onset sepsis (EOS) in neonates occurs in the perinatal period, while late-onset infection, especially sepsis and pneumonia, is transmitted in the nursery ***(Ahrens et al., 2004)***.

For many years, a search has been ongoing to find predictors for neonatal sepsis that identify effectively patients who are at risk of infection ***(Ahrens et al., 2004)***.

Leptin is an important immunoregulatory hormone since it enhances a number of immune responses, including macrophage effector functions ***(Flanagan et al., 2007).***

Leptin enhances cytokine synthesis, and T helper (Th) cell polarization to a Th1 phenotype **(Maffei et al., 2005).** Leptin level increases in response to infection and inflammatory stimuli ***(Sarvikivi et al., 2005).*** Congenital leptin deficiency has been associated with childhood infections and early mortality and a reduced Th1 immunity ***(Farooqi et al.,2007)*** .