INTRODUCTION

Perinatal asphyxia is an insult to the fetus or newborn due to a lack of oxygen (hypoxia) and/or a lack of perfusion (ischemia) to various organs ***(Marcio, 2002)***.

Hypoxic ischemic injury is the most important consequence of perinatal asphyxia. Reperfusion of previously ischemic tissue may also promote the formation of excess oxygen free-radicals, which may damage cellular lipids, proteins, nucleic acids and the blood brain barrier ***(Ashok et al., 2008)***.

Perinatal asphyxia is a major cause of immediate and postponed brain damage in the newborn. It may be responsible for several delayed neurological disorders, and in this respect, early markers of brain injury would be relevant for therapeutic intervention and identification of infants at high risk ***(Velez et al., 2006)***.

Isoprostanes (IsoPs) are prostaglandin (PG) like compounds that are produced in vivo independently of cyclooxygenase (COX) enzymes, primarily by free radical induced peroxidation of arachidonic acid (AA) ***(Ginger et al., 2008)***.

Measurement of F2-IsoPs is the most reliable approach to assess oxidative stress (OS) status in vivo providing an important tool to explore the rule of OS in the pathogenesis of human disease ***(Montuschi et al., 2007)***.

F2-IsoPs is the best characterized and the most abundant form found in plasma, serum and urine. Evidence indicates that F2-IsoPs can be successfully used to study the mechanisms involved in free radical induced brain damage following Ischemia-reperfusion ***(Roger et al., 2005).***

F2-Isoprostanes have been taken in consideration as potential biochemical markers for the hypoxic ischemic insult ***(Greco and Minghetti, 2004).***

The marked increase in plasma IsoPs suggests that OS is a feature of the physio-pathological changes seen in the perinatal period ***(Milne et al., 2007).***

AIM OF THE WORK

The aim of this work is to evaluate serum level of F2-Isoprostane in neonatal hypoxic ischemic encephalopathy and correlate the levels with the severity of insult and thus predict possible role of F2-Isoprostane in identification of infants at high risk and the possible early therapeutic intervention.