Chapter 13

ANTENATAL CORTICOSTEROID THERAPY: WHO, WHEN, WHY ?

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Preterm birth (PTB) is one of the leading causes of neonatal mortality and is the most common cause of hospitalization in the antenatal period and complicates approximately 12 % of all live births, which is responsible for 70 % of newborn deaths[(1)].

In order to improve neonatal outcomes such as necrotizing enterocolitis (NEC), intraventricular hemorrhage (IVH), and respiratory distress syndrome (RDS) to reduce rate of mortality in premature babies, antenatal corticosteroid (ACS) supplementation is suggested before preterm delivery, which is a major evidence based practice[(2,3)]. In addition, ACS can lead to neonatal adaptation such as cardiovascular and blood pressure, advanced renal function, improved skin for reducing trans-dermal water loss, which is other clinical advantage[(4)].

According to all acknowledges about ACS, there is no disagreement using ACS before 34 weeks of gestation. The aim of this book chapter is to describe the scientific basis of ACS, to improve the management of PTB and decreasing rates of adverse perinatal outcomes in premature infants.

PATHO-PHYSIOLOGY AND MECHANISM OF ACTION

The reason of supplementation of ACS before PTB is to imitate the increased endogenous corticosteroids which is occurred last of the third trimester of pregnancy and maturates almost all organs of newborn. The most used ACS is betamethasone and dexamethasone before 34th weeks of gestation, they can easily cross the placenta, since they cannot degraded by placental 11-β-hydroxysteroid dehydrogenase-2. In addition, they can improve to produce surfactant, which can increase pulmonary volume and compliance, decrease vascular permeability, maturate pulmonary parenchymal structure and improve respiratory function.

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were shown no evidence of long-term harm in terms of newborn after delivery due to supplementation of ACS in women who are less than 34th gestational weeks[42].

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