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ORIGINAL ARTICLE

Antenatal corticosteroid therapy and late preterm infant morbidity and mortality☆

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KEYWORDS
Late preterm infants;
Antenatal corticosteroids;
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Abstract
Introduction: Late preterm infants (34–36 weeks gestation) have a morbidity rate significantly higher than those born at term. However, few interventions have been undertaken to reduce this increased morbidity and mortality. Antenatal corticosteroid administration could be an effective preventive measure.
Objective: The aim of this study was to describe the morbidity associated with late prematurity in our institution, and determine if there are differences between those who received antenatal corticosteroids.
Patients and methods: A prospective observational study was conducted on late preterm infants born in a tertiary hospital from October 2011 until September 2012. Two groups were formed according to whether or not they had received antenatal steroids. The rates of morbidity and mortality for each of the groups were analysed and compared.
Results: There was a total of 4127 live newborns during the study period, of whom 3795 were term and 332 were preterm (the overall prematurity rate was 8.04%). There were 247 late preterm deliveries, representing 6% of live born infants, and 74.4% of all premature infants. Of late preterm infants, 63.2% were admitted to the Neonatal Unit and 29.6% had received antenatal steroids. The incidence of admission to the Neonatal Unit and Neonatal Intensive Care, transient tachypnea, need for respiratory support in the form of continuous positive pressure airway and oxygen therapy, incidence of hypoglycemia, feeding difficulty, and jaundice requiring phototherapy were significantly higher ($P < 0.05$) in the late preterm group that did not receive antenatal steroids.

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Conclusions: Our finding suggests that the administration of antenatal corticosteroids to patients at risk of 34–36 weeks delivery could significantly reduce the cost and acute morbidity associated with late preterm birth.

PALABRAS CLAVE
Prematuro tardío;
Corticoides prenatales;
Prematuro

Corticoterapia prenatal y morbimortalidad del prematuro tardío: estudio prospectivo

Resumen
Introducción: Se define al prematuro tardío como al recién nacido de 34 a 36 semanas de gestación. Este grupo presenta mayor riesgo de complicaciones que los nacidos a término. Sin embargo, son pocas las intervenciones que se realizan para reducir esta mayor morbimortalidad. La administración prenatal de corticoides podría ser una medida preventiva eficaz.
Objetivo: Describir la morbilidad asociada a la prematuridad tardía y determinar si existen diferencias en los prematuros tardíos que recibieron corticoides prenatales.
Pacientes y métodos: Estudio observacional prospectivo de los prematuros tardíos nacidos en un hospital terciario desde octubre de 2011 a octubre de 2012. Se clasificaron en 2 grupos, según hubiesen o no recibido corticoides prenatales, y se compararon las tasas de morbimortalidad entre los 2 grupos.
Resultados: La tasa de prematuridad global fue del 8,04%, de los cuales el 74,4% (n = 247) fueron prematuros tardíos. Precisaron ingreso el 63,2% (n = 156), suponiendo el 17% del total de ingresados y el 20,6% de los ingresos en la unidad de cuidados intensivos neonatales. Recibieron corticoides prenatales el 29,6% (n = 73). La incidencia de ingreso en neonatología y cuidados intensivos neonatales, la presencia de taquipnea transitoria, hipoglucemia, intolerancia digestiva, ictericia, asistencia respiratoria en forma de presión positiva continua en la vía respiratoria nasal, oxigenoterapia, sueroterapia y fototerapia fueron significativamente superiores ($p < 0,05$) en el grupo que no recibió corticoides prenatales.
Conclusiones: La morbilidad de los prematuros tardíos de nuestro medio es significativamente inferior en los que recibieron corticoides prenatales, por lo que podría ser útil prolongar su administración más allá de las 34 semanas.

Introduction

Preterm birth is the primary cause of perinatal morbidity and mortality in developed countries. In the past few years, the rate of preterm births and the rate of survival of premature babies have both increased. Late preterm infants (LPIs), born between 34^{+0} and 36^{+6} weeks of gestational age, constitute the most frequent group (amounting to 75% of total premature births) and the one that has increased most significantly.[1–3] Overall, they are at lesser risk than babies born at lower gestational ages, but recent studies have shown that due to their immaturity, their morbidity and mortality is greater than those of babies born at term.[4–6] Although they are a high-risk group, few routine interventions have been established to reduce their higher rates of morbidity and mortality. One of the interventions that has most contributed to improve the prognosis of preterm NBs is the antenatal administration of corticosteroids.[7] However, the foetal lung is considered to be mature at 34 weeks of gestation, at which point administration of corticosteroids is no longer indicated. As a result, few studies have evaluated the effect of antenatal corticosteroids in the late-preterm population.[8–10]

We set the following goals to assess the effect of antenatal corticosteroids in LPIs in our centre: to describe the morbidity associated to late prematurity and to determine if there are differences in the infants exposed to antenatal corticosteroids, as well as the associated prevalence, aetiology, and obstetric conditions.

Population and methods

We conducted a prospective observational study the main purpose of which was assessing whether antenatal administration of corticosteroids in LPIs had an effect on their outcomes. We selected all patients born alive at 34^{+0} to 36^{+6} weeks of gestation in our hospital in a one-year period (October 1st, 2011 to September 30th, 2012). Gestational age was determined by obstetric criteria, based on the first day of the last menstrual period or on the ultrasound scan of the first half of the pregnancy. We calculated the overall rate of preterm birth and the rate of late preterm birth in the period under study.

We classified the selected NBs in 2 groups: (a) those that had been exposed to antenatal corticosteroids (prenatal administration of one or two 12-mg doses of betamethasone