



BRIEF REPORT

## Antenatal corticosteroids and prevention of respiratory distress in the premature newborn: Usefulness of rescue treatment<sup>☆</sup>

O. López-Suárez\*, C. García-Magán, R. Saborido-Fiaño, A. Pérez-Muñuzuri, A. Baña-Souto, M.L. Couce-Pico

*Servicio de Neonatología, Hospital Clínico Universitario de Santiago de Compostela, Santiago de Compostela, A Coruña, Spain*

Received 5 June 2013; accepted 23 June 2013

Available online 23 July 2014

### KEYWORDS

Antenatal corticosteroids;  
Back-up therapy;  
Hyaline membrane disease;  
Prematurity

**Abstract** The effectiveness of antenatal corticosteroid therapy for foetal lung maturation in pre-term infants is well known, but there is uncertainty about the time that the treatment remains effective. A descriptive, longitudinal study was conducted to determine whether the need for surfactant administration was determined by the time-lapse between corticosteroids administration and delivery, and when repeating the doses of maternal corticosteroids should be considered. A total of 91 premature infants  $\leq 32$  weeks and/or  $\leq 1500$  g (limit 34 + 6 weeks) whose mothers had received a complete course of corticosteroids were included. In patients at 27–34 + 6 weeks, we found that the longer the time elapsed between delivery and administration of corticosteroids, the more likely the babies were to require treatment with surfactant ( $p = 0.027$ ). The resulting ROC curve determined an 8-days cut-off after which repeating a dose of corticosteroids should be assessed.

© 2013 Asociación Española de Pediatría. Published by Elsevier España, S.L.U. All rights reserved.

### PALABRAS CLAVE

Corticoides antenatales;  
Terapia de rescate;

### Corticoides antenatales y prevención del distrés respiratorio del recién nacido prematuro: utilidad de la terapia de rescate

**Resumen** Aunque se conoce la efectividad de la corticoterapia materna para la maduración pulmonar foetal en prematuros, no hay seguridad acerca del tiempo en que el tratamiento continúa siendo efectivo. Realizamos un estudio descriptivo y longitudinal, para relacionar el tiempo transcurrido desde la administración de glucocorticoides maternos, y la necesidad o

DOI of original article: <http://dx.doi.org/10.1016/j.anpedi.2013.06.028>

<sup>☆</sup> Please cite this article as: López-Suárez O, García-Magán C, Saborido-Fiaño R, Pérez-Muñuzuri A, Baña-Souto A, Couce-Pico ML. Corticoides antenatales y prevención del distrés respiratorio del recién nacido prematuro: utilidad de la terapia de rescate. An Pediatr (Barc). 2014;81:120–124.

\* Corresponding author.

E-mail address: [Olalla.elena.lopez.suarez@sergas.es](mailto:Olalla.elena.lopez.suarez@sergas.es) (O. López-Suárez).

Enfermedad de membrana hialina; Prematuridad

no de surfactante, y a partir de qué punto se debería considerar la repetición de las dosis de corticoides maternos. Se incluyeron 91 prematuros de  $\leq 32$  semanas y/o  $\leq 1.500$  g (límite 34 + 6 semanas) cuyas madres habían recibido una pauta completa de corticoides. En los pacientes de 27-34 + 6 semanas, comprobamos que a mayor tiempo transcurrido entre el parto y la administración de corticoides, mayor probabilidad de necesitar tratamiento con surfactante ( $p = 0,027$ ). La curva ROC calculada determinó un punto de corte de 8 días a partir del cual debería valorarse el repetir la dosis de corticoide.

© 2013 Asociación Española de Pediatría. Publicado por Elsevier España, S.L.U. Todos los derechos reservados.

## Introduction

One of the greatest challenges for the neonatologist is the respiratory management of preterm infants (PTIs), with respiratory distress syndrome being the main disease in the field. Administration of antenatal corticosteroids in women at risk of preterm delivery and for gestational ages  $\leq 34$  weeks is indicated to prevent this condition.<sup>1,2</sup> It has been demonstrated that a single complete course of antenatal corticosteroids (IM administration of 2 doses of 12 mg of betamethasone each 24h) reduces neonatal mortality and severe morbidity with no long-term side effects.<sup>1,3,4</sup>

Until the year 2000, weekly rescue courses of corticosteroids were administered until delivery because maximum benefits were obtained between 24h and 7 days following administration of the last dose.<sup>5</sup> That year, the panel of the Consensus Development Conference of the National Institutes of Health of the United States concluded that there were insufficient data to justify repeat courses of corticosteroids.<sup>6</sup> Since then, several randomised clinical trials have been conducted that prove the effectiveness of antenatal corticosteroid therapy in promoting foetal lung maturation, but it is uncertain how long the treatment remains effective.<sup>7-10</sup>

The 2012 Cochrane Review<sup>1</sup> indicates that given the short-term benefits of repeat doses of antenatal corticosteroids, this treatment should be considered in women who have received a course of corticosteroids 7 or more days previously and who are at risk of preterm birth ( $\leq 34$  weeks). Along these lines, the Sociedad Española de Ginecología y Obstetricia (Spanish Society of Gynaecology and Obstetrics, SEGO) recommends the administration of antenatal corticosteroids to pregnant women at risk of preterm birth between weeks 24 and 34 + 6, and a repeat course if the clinical diagnosis of preterm risk persists or recurs.<sup>11</sup>

## Methods

We performed a retrospective, longitudinal descriptive study of PTIs born in our hospital between January 2008 and December 2011 to analyse the relationship between the time elapsed between corticosteroid administration to the mother and delivery, and the need for endotracheal surfactant treatment. We also sought to establish the moment from which repeat administration of antenatal

corticosteroids should be considered when the risk of preterm birth remains.

The inclusion criteria were PTIs  $\leq 32$  weeks and/or  $\leq 1500$  g (age limit 34 + 6 weeks for low birth weight infants), whose mothers had received a complete course of corticosteroids to promote foetal lung maturation.

For each patient, we collected data on their sex, birth weight, gestational age, administration of antenatal corticosteroids, time elapsed between the last dose of corticosteroids and delivery, need for surfactant therapy, number of surfactant doses, need for budesonide at discharge, and death.

We did the statistical analysis with the SPSS® software version 20, using Student's *t*-test, the Mann-Whitney *U* test, the Wilcoxon signed-rank test, ANOVA, and the Kruskal-Wallis test to compare quantitative data; Pearson's  $\chi^2$  test for qualitative data; and a multiple logistic regression model to plot prediction curves.

## Results

During the 4 years of the study, 144 infants (82 boys and 62 girls) with gestational ages  $\leq 32$  weeks and/or a birth weight  $\leq 1500$  g (gestational age  $\leq 34 + 6$  weeks) were born in our centre. The mean gestational age was  $29.33 \pm 2.58$  weeks and the mean birth weight was  $1150 \pm 280$  g; 91 patients (63%) were exposed to a complete course of antenatal corticosteroids to promote foetal lung maturation, 21 (15%) to an incomplete course, and 32 (22%) were unexposed. The main descriptive characteristics of the patients are shown in Table 1.

Out of the 91 patients exposed to a complete course of corticosteroids, 45 were treated with surfactant and 46 were not. The distribution of these patients by birth weight and gestational age is shown in Table 2.

When we compared the mean number of days elapsed since the administration of antenatal corticosteroids with the need for endotracheal surfactant treatment we found no significant differences ( $p = 0.286$ ). However, when we stratified the patients by gestational age we saw that there were no differences in the group aged  $\leq 26 + 6$  weeks, while in the 27-34 + 6 weeks group the probability of requiring surfactant treatment became higher ( $p = 0.027$ ) as the time elapsed between corticosteroid administration and delivery increased.

Download English Version:

<https://daneshyari.com/en/article/4145308>

Download Persian Version:

<https://daneshyari.com/article/4145308>

[Daneshyari.com](https://daneshyari.com)