



Management of infants with chronic lung disease of prematurity in Chile

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KEYWORDS

Bronchopulmonary dysplasia;
Chronic lung disease;
Prematurity;
Oxygen therapy;
Home oxygen;
RSV infection;
Palivizumab;
Steroids;
Diuretics;
Bronchodilators

Abstract Despite advances in the prevention and management of respiratory distress syndrome, chronic lung disease of prematurity (CLD) remains a major cause of morbidity and mortality in preterm babies in Chile. Its incidence varies from 10% to 60% in different regions of Chile. Since 1998, the management of CLD after discharge from neonatal unit follows national guidelines. Target oxygen saturation is 85% to 91% in the first week of life, 91% to 94% from 1 to 2 weeks and over 95% after 44 weeks postconceptional age. National home oxygen program has improved outcome in infants with CLD. Other specific treatments are used with caution. Diuretics are used for pulmonary oedema. The adverse neurological outcome in infants treated with postnatal steroids restricts its use to infants who cannot be weaned from mechanical ventilation. Inhaled steroids and bronchodilators may reduce asthma-like symptoms in established CLD. Prevention of RSV infection in CLD babies is paramount. The preterm infant population has been maintained under surveillance nationally since 1998.

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1. Introduction

Chile is a country of over 15 million, of which 25% are less than 15 years old. Forty percent of the population lives in the capital, Santiago. Its economic status is that of a developing country with an annual income of US Dollars \$4937 per capita. The National Ministry of Health (MINSAL) in

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Chile has a long-standing tradition in health organisation. Thus the country exhibits good health development: overall mortality rate of 5.4 per 1000 inhabitants, hospital deliveries of 99.6%, paediatric immunization rates of 95%, tap water available to 99.3% of the population, sewer system to 91%, scholarships to 97.5% and life expectancy of 75.2 years [1,2]. Health is provided by a mixed public and private system. The public health system cares for 70% of the population and dictates health policies. Private health accounts for the 30% and is through an insurance system. Mortality from pneumonia in infants has decreased from 221.2 per 100,000 in 1990 to 38.8 per 100,000 infants in 2000 [3,4]. Infant mortality rate is less than 8 per 1000 live births and more than 50% occur in the neonatal period. Fifty percent is due to prematurity and most of the rest due to congenital malformations. Incidence of newborn born at less than 32 weeks of gestation was 0.9% in Chile in 2000. Survival varied from 8% in babies with less than 600 g at birth to 90% in babies with birth weight of between 1250 and 1500 g. Forty three percent of deaths occur during the first day of life. Late mortality, beyond 28 days, was 12% [5,6].

Collection of statistics of very low birth weight babies (VLBW) in our country has not been accurate because of lack of a national register. Since 1998 there has been a national working group led by neonatologists, with assistance of other paediatric specialists, to unify and provide common criteria for diagnosis and management of VLBW infants. The aim of the group was to improve coordination at different levels within

the 28 Health Regional Areas in Chile in order to obtain information concerning the health status of VLBW babies at discharge from Neonatal Intensive Care Unit (NICU) and on their follow-up. Chronic lung disease of prematurity (CLD) or bronchopulmonary dysplasia (BPD) has been one area of focus. Special follow-up of preterm and CLD infants started in 1995 as a pilot program, focusing on babies born in the North Area of Santiago. This pilot scheme has evolved into a national program.

2. Incidence

The incidence of CLD in Chile varies geographically (Fig. 1). Changing epidemiology and definitions of the disease complicate analysis. In our country, as with others, the increased survival of VLBW can be attributed to the introduction and subsequent widespread use of antenatal steroids as well as the introduction of exogenous surfactant replacement therapy in 1998 [2,6]. Newer modes of mechanical ventilation that reduce barotrauma, improved nutritional interventions and, accurate and continuous monitoring of oxygen therapy were introduced. During 1995 to 1997, pre-surfactant era in the North Area of Santiago, the incidence of CLD/BPD was 16% using the more useful definition of oxygen requirement at 36 weeks postconceptional age, rather than at 28 days postnatal age, where a 21% incidence was found (Palomino MA, Morgues M, Valdes I, Vernal P. unpublished data). The national survey in 2000 of 1477 newborn less

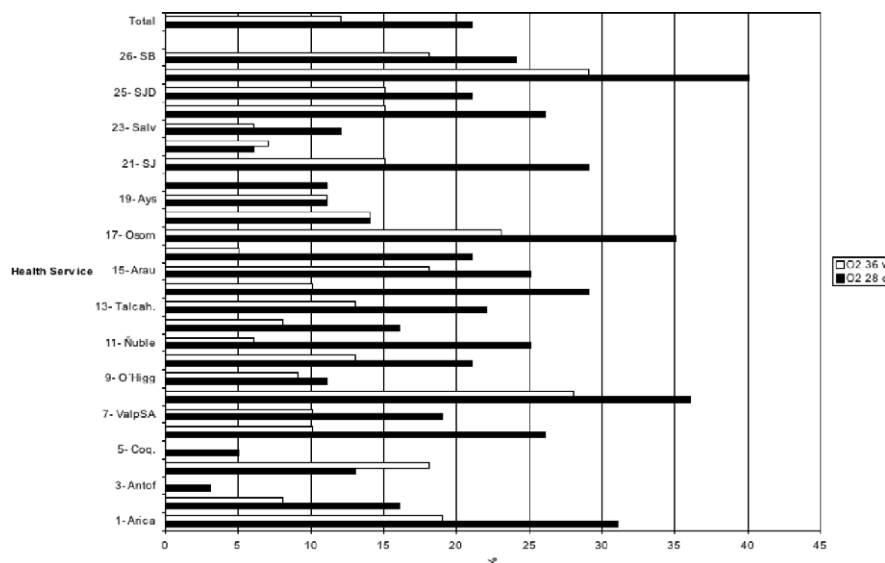


Figure 1 Regional and national incidence of Chronic Lung Disease of Prematurity. Chile 2000.

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