



Advances in the management of the extreme preterm infant



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Twenty-first century man is surrounded by paradoxes. Advances in science and technology permit navigation and investigation of the distant planets and the depths of our own bodies, making it possible to understand complex mechanisms that surround our very existence. Man, therefore, sometimes feels gifted with divine powers, unmasking mysteries that until very recently were the realm of speculation and imagination. Simultaneously, however, human impotence is manifest in the impossibility of predicting and avoiding the catastrophes that befall throughout the history of humanity.

In the microcosm of neonatology, these same paradoxes are part of the daily routine of research and care. On the one hand the advances achieved are startling. In the last 30 years, we have witnessed and taken part in a revolution in the area, with increasing survival of ever more premature newborns and also of those suffering from malformations previously considered incompatible with life. Research has provided so much knowledge that it is possible to care simultaneously for the respiratory, cardiovascular, infectious, metabolic, nutritional and neurological problems of sick

newborn infants in the highly specialized environment of neonatal intensive care units with professionals specifically trained for the challenge of providing the best possible care to such patients. On the other hand, the survival of these babies imposes a challenge that is almost insurmountable: the mission to return to families and to society a child who is capable of completely developing his/her emotional, cognitive and productive potential. The imprecise division between the point to which neonatologists can and should be concentrated to maintain the lives of our small patients is one of the slippery slopes on which it is most difficult to make the correct decisions.

In this paradoxical context of advances and impotence, the understanding of limits and the incessant quest to overcome them are exactly what propels the development of medical art and science along its journey of knowledge. It is on this journey that the current supplement to the *Jornal de Pediatria* is to be found.

For the supplement we first established the general theme, according to the challenges that face neonatologists today. We therefore chose to deal with extreme prematurity

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since, without doubt, the clinical incorporation of advances in understanding of the physiology and diseases of these patients can improve not just their chances of life, but also the quality and development of that life. Once the general theme was chosen, we define the specific subjects to be covered and the authors. Thus, we chose to cover themes going from precautions when resuscitation of extremely premature infants, passing via common concerns relating to the hospital care of these patients, such as minimizing pulmonary damage, necrotizing enterocolitis and bacterial and fungal sepsis, nutritional issues and ischemic brain injuries, to subjects relating to post-discharge follow-up of these children, dealing with their growth and development, pulmonary prognosis, the most prevalent ophthalmological

problems and doubts about passive and active immunization. In closing the supplement, we thought it important to situate our readers with respect of the mortality of extremely premature children in our country, discussing the challenges that await us over the next years. As for the authors, we invited Brazilian doctors, working here or abroad, recognized for their academic and clinical experience in each of the sub-areas of knowledge, to develop the proposed themes.

We therefore dedicate this issue of the supplement to you the reader, so that you may, incorporating the knowledge so gained into your own clinical practice, increase your possibilities for following the basic ethical principles of neonatal care: to do good, without doing harm to our small patients.