NUTRITION OF THE VERY LOW BIRTHWEIGHT INFANT

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Contents

Early Nutrition and Later Outcome .............................................. 1
Alan Lucas

Early Growth and Later Development ........................................... 19
Ruth Morley

Effects of Long-Chain Polyunsaturated Fatty Acids in Premature Infants ...................................................... 33
Berthold Koletzko, Ulrike Diener, Maria Fink, Thomas Berghaus, Hans Demmelmaier, Patrick von Schönaich, and Ulrich Bernsau

Early Use of Parenteral Amino Acids ........................................... 53
William C. Heird

Early Administration of Intravenous Lipids: Still under Debate ....... 69
Guy Putet

Fortification of Human Milk ..................................................... 81
Guido E. Moro and Iolanda Minoli

Clinical Benefits of Human Milk for Premature Infants ................. 95
Richard J. Schanler

Development of Lung Defenses Against Free Radical Injury .......... 107
Lee Frank

Pro-Oxidant Effects of Iron in the Newborn Period ....................... 121
Howard M. Berger, R. M. W. Moison, D. Van Zoeren-Grobben, N. Conneman, and J. Geerdink

Nitrogen Balance and Plasma Amino Acid in the Evaluation of Protein Source for Extremely Low Birthweight Infants ......................... 139
Jacques Rigo, G. Putet, J. C. Picaud, C. Pieltain, M. De Curtis, B. L. Salle, and J. Senterre

Protein Requirement of the Extremely Low-Birthweight Preterm Infant ................................................................. 155
Jean-Léopold Micheli, Claire-Lise Fawer, and Yves Schutz

Protective Nutrients for the Immature Gut .................................. 179
W. Allan Walker and Dingwei Dai

Feeding and Neonatal Necrotizing Enterocolitis .......................... 199
Firmino F. Rubaltelli, Roberto Biadaioli, and M. Francesca Reali
Feeding and Maturation of Gut Motility ........................................... 211
Carol Lynn Berseth

Actual Nutrient Intakes of Extremely Low-Birthweight Infants .......................... 221
Susan J. Carlson

Trophic Feeds ................................................................. 233
Ekhard E. Ziegler

Milk-Borne Growth Factors and Gut Development ..................................... 245
Bohuslav Dvorak, Anthony F. Philipps, and Otakar Koldovsky

Subject Index ................................................................. 257
Preface

Neonatal medicine has made great strides in recent years and the result is that very small and immature infants are surviving in ever greater numbers. Nourishing these small infants presents an enormous challenge—to provide nutrition effectively and safely, to provide enough nutrition but not too much, and to do it all without undue risks. For a time after birth, the immature gastrointestinal tract must be approached with care, until it acquires the ability to handle full nutrition—hence the need for parenteral nutrition during the immediate postnatal period.

During this workshop, several speakers reviewed the encouraging progress that has been made in the use of parenteral nutrition. At its best, parenteral nutrition buys valuable time to nurture the gastrointestinal tract and does so with acceptable risk. Several presentations addressed the gastrointestinal tract: its immaturity, its vulnerability, and its peculiarities. In the past, feeding regimens designed to protect the gastrointestinal tract have emphasized the withholding of feeds, whereas in recent years, early introduction has been favored. Human milk clearly has established itself as the preferred feeding, not least because it offers greater protection for the safety of the gastrointestinal tract. Safety is an issue when iron and other essential but pro-oxidant nutrients are considered.

Does it all matter? It certainly matters in the short run. In the long run, the quality of neonatal nutrition does seem to impact later development. This finding was emphasized at the workshop, where poor growth in late infancy was shown to be a harbinger of poor development later in life. All this contributes a degree of urgency to all the questions surrounding the feeding of very low birthweight infants. Many small steps may add up to real progress. However, measuring progress objectively is one of the big challenges, along with ensuring that risks are not incurred unless they are outweighed by potential benefits.

The challenges of neonatal nutrition are many. Addressing them all during the span of the workshop would have been impossible. Selectivity was therefore inevitable. Concentrating on a few select topics meant that other important subjects would not be covered. Examples include bone growth and mineralization, body composition, and the entire topic of micronutrients. Nutrition of the very low birthweight infant is a large topic, but so is the number of potential beneficiaries of progress. This conference may have been one of the small steps that eventually add up to real progress.

Ekhard E. Ziegler
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Foreword

Feeding small premature infants is an enormous challenge for neonatologists, for nurses, and after discharge from the hospital, for the parents. Breast milk, the gold standard for feeding healthy term infants, is at best a reference for small premature infants. Their dietary needs substantially differ from those of term infants. Essential nutrients such as iron can become toxic under certain circumstances and can contribute to morbidity. Adequate intake should allow catch-up growth, avoid metabolic imbalances, and support the normal function of organs, in particular the brain. However, tolerance of oral nutrition is a limiting factor that is well known to all clinicians. Periods of abdominal distension and gastrointestinal problems are frequent and limit intake.

Substantial progress in perinatal care and neonatal intensive medicine now allows survival of a substantial number of infants with birth weights as low as 500 grams. Calculation of their nutritional requirements, clinical management during enteral nutrition, and long-term outcome are discussed during this workshop. The results of those discussions will help to further improve the quality and stimulate innovation of human milk fortifiers and formulas for small premature infants.

The programme of this workshop, which was proposed by the three Chairmen—Professor Ekhard E. Ziegler, Professor Alan Lucas, and Dr. Guido E. Moro—covers the most relevant aspects of clinical management of early enteral nutrition but also focuses on follow-up nutrition and evaluation of outcome. I thank the Chairmen and all of the speakers for their contribution to the programme. The 43rd Workshop was the first of its kind in Central Europe and Nestlé Poland provided all the logistic support that was required for a successful outcome. We thank them for their wonderful hospitality, excellent organization, and incomparable entertainment.

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