



Primary Congenital Hypothyroidism in Children Below 3 Years Old - Etiology and Treatment With Overtreatment and Undertreatment Risks, a 5-Year Single Centre Experience

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Worldwide neonatal screening for congenital hypothyroidism (CH) is a gold standard of active surveillance in newborns. Prompt diagnosis, subsequent timely treatment implementation, and proper dosage of levothyroxine (L-T4) are crucial for normal growth and development, especially of the central nervous system. However, overtreatment may have a potential negative impact on further neurodevelopment. We retrospectively analysed data of 99 newborns with CH diagnosis, referred to the Endocrinology Outpatient Clinic of the Institute of Mother and Child in Warsaw, Poland from the CH screening program from 2017 to 2021. We evaluated the diagnostic process and treatment up to the age of 3 years. We compared groups of children from the first and the second screening groups (FSG, SSG) in the neonatal screening with an evaluation of ultrasound examination (thyroid dysgenesis vs. gland in situ, GtS). The overtreatment and undertreatment risks were assessed and an analysis of the new TSH thresholds was performed. Treatment was implemented at a median of 9 days of life (3 – 27); 8 days (3 – 17) in FSG and 19 (6 – 27) in SSG. The dose of L-T4 differed between FSG and SSG at all three analysed time points (start of the therapy, 12 months, and 3 years) with significantly higher doses in FSG. The same was observed for the patients with thyroid dysgenesis vs. GtS. Screening TSH level was $\geq 28\text{mIU/L}$ in 91.7% of patients with thyroid dysgenesis in comparison to 74.0% of patients with GtS ($p = 0.038$). The optimally treated group (fT4 in the upper half of the reference range, according to the guidelines) was up to 58.0% of the children during the follow-up. The risk for overtreatment was present in 1/5 of the study group after 12 months and 1/4 after 3 years of L-T4 therapy. Analysis of new TSH thresholds showed an increased prevalence of mild hypothyroidism, GtS, and either euthyroid state or overtreatment while treating with lower L-T4 doses in comparison to the

Research In Congenital Hypothyroidism

S Marginson



Research In Congenital Hypothyroidism:

Research in Congenital Hypothyroidism F. Delange,D.A. Fisher,D. Glinioer,2012-12-06 Systematic screening for congenital hypothyroidism in the newborn was introduced some 15 years ago The main objective was the prevention of mental retardation due to thyroid hormone deficiency during the early months of life During the past decade screening programs have become routine throughout most of the industrialized world and many questions relating to implementation organization and quality control of such programs have been largely resolved Preliminary IQ and neurological data have indicated that screening and early treatment do in fact prevent mental retardation However a number of scientific questions related to congenital hypothyroidism remain unanswered and extensive research activities are ongoing in the field The objective of the organizers of the Brussels workshop was to focus almost exclusively on these current research aspects of the screening programs This workshop is the third international conference specifically devoted to neonatal thyroid screening The first was held in La Malbaie in Quebec in the fall of 1979 That meeting was well organized and highly productive Its proceedings constitute a bible in the field After the Quebec meeting we witnessed major and rapid advances in our understanding of neonatal thyroid physiology as well as screening methodology organization data management the significance of an approach to false negative and false positive results patient follow up and assessment of follow up and treatment and the psychoneurological evaluation of affected infants Some of these aspects were further developed during a second highly productive international conference organized in Tokyo in 1982

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Psychoneuroendocrinology Clarissa S. Holmes, 2012-12-06: more intuitive study to greater empiricism. Frequently, chapters are divided into discrete sections to discuss each rather distinct era of inquiry. This approach, when used, can provide a valuable historical overview of the early clinical formulations about each disease. Even though many of the earlier research philosophies and techniques may seem so simplistic as to mitigate against their inclusion, early research hypotheses were often generated from astute observation of clinical findings and relationships. In addition to shaping later empirical questions, a review of historical antecedents provides a yardstick by which to measure the progress of more current studies, even though much is yet to be learned. As is true of any refinement of knowledge, the juxtaposition of the two approaches of study reveals that some of the early postulations about patient attributes and disease consequences have been confirmed while other suppositions have been discarded. Although the generally subjective assessment methods used in the early studies may not have provided an optimal data base, it is interesting to note which clinical impressions were able to withstand greater empirical rigor and which were not. The book, at its inception, was intended to provide a succinct introduction to psychoneuroendocrinology research for practitioners and scientists who might be relatively unfamiliar with the area. However, it quickly became apparent that the sophistication of the information could not be readily reduced without vast oversimplification and loss of substance.

Neonatal health in low- and middle-income countries Britt Nakstad, Ashish K. C., Andrew Steenhoff, Susan Coffin, 2023-05-05

Advances in Perinatal Thyroidology Barry B. Bercu, Dorothy I. Shulman, 2013-03-08: Perinatal problems in thyroid gland physiology are common but complicated and present a diagnostic dilemma for the primary clinician. In December 1990, an international group of basic and clinical investigators gathered in Longboat Key, Florida, to address these issues. The participants included internists, obstetricians, pediatricians, neurologists, pathologists, and basic scientists in cellular metabolism, endocrine physiology, and molecular biology. The presentations contained within this book bring together their most current and vital research related to the field of perinatal thyroidology. This book is based on the dynamic and fruitful exchange of the participants at the symposium. We are indebted to these individuals whose valuable insights and efforts are contained within this text.

Barry B. Bercu, Dorothy I. Shulman, vii

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An Animal Model to Study Fetal Effects of Maternal Hypothyroidism 107 Susan P Porterfield and Chester E **Research Awards Index** ,1988 Yearbook of Pediatric Endocrinology 2012 K. Ong,Z. Hochberg,2012-10-01 The body of knowledge in most medical specialties is rapidly expanding making it virtually impossible to follow all advances in clinical and basic sciences that are relevant to a given field This is particularly true in pediatric endocrinology at the cross road of pediatrics endocrinology development and genetics Providing abstracts of articles that report the year s breakthrough developments in the basic sciences and evidence based new knowledge in clinical research and clinical practice that are relevant to the field the Yearbook of Pediatric Endocrinology 2012 keeps busy clinicians and scientists pediatric endocrinologists and also pediatricians and endocrinologists informed on new advances Twelve Associate Editors and their co authors selected from several thousand papers those that brought the most meaningful new information summarized them and provided comments to put them into perspective The papers are classified into those that identify new genes involved in diseases new hormones concepts revised or re centered important observations for clinical practice large scale clinical trials new mechanisms new paradigms important review articles new fears and new hopes Because the Yearbook is endorsed by the European Society for Paediatric Endocrinology ESPE its publication is linked to the annual meeting of the ESPE The Yearbook of Pediatric Endocrinology 2012 covers the medical and scientific literature from June 2011 through May 2012 **Brain abnormalities due to genetic alterations or developmental exposure to environmental factors** Kazuhiko Sawada,Atsushi Yoshiki,Shigeyoshi Saito,2022-08-31 **Cognitive and Behavioral Abnormalities of Pediatric Diseases** Ruth Nass, MD,Yitzchak Frank, MD,2010-04-12 This book provides a detailed account of intellectual other neuropsychological and behavioral manifestations of general pediatric diseases The conditions discussed include the whole range of pediatric diseases genetic syndromes other congenital conditions metabolic endocrine gastrointestinal infectious immunologic toxic trauma and neoplastic as well as sensory disabilities including deafness and blindness Although the book is not intended to discuss cognitive and behavioral manifestations of conditions usually considered to be primary neurological disease some of those including cerebral palsy muscular dystrophy myotonic dystrophy and epilepsy are included Where possible a translational approach is used linking the behavioral and cognitive manifestations of these conditions to the underlying structural chemical or genetic abnormalities and their effect on the brain and in turn on behavior and cognition At the same time included are significant psychosocial factors Together those factors have a major effect on patients performance including school performance and on their families This book is unique in its extensive coverage of the major pediatric conditions and of the detailed neurological neuropsychological and behavioral aspects of each condition

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Neurogenetic Developmental Disorders Michèle M. M. Mazzocco, Judith L. Ross, 2007 Table of Contents 1 Turner syndrome in childhood Marsha L Davenport Stephen R Hooper and Martha Zeger 2 Klinefelter syndrome Judith L Ross Gerry A Stefanatos and David Roeltgen 3 Fragile X syndrome the journey from genes to behavior Kimberly M Cornish Andrew Levitas and Vicki Sudhalter 4 Duchenne muscular dystrophy Veronica J Hinton and Edward M Goldstein 5 Neurofibromatosis John M Slopis and Bartlett D Moore III 6 Cognitive and behavioral characteristics of children with chromosome 22q11.2 deletion syndrome Tony J Simon Merav Burg Malki and Doron Gothelf 7 Williams Syndrome Carolyn B Mervis and Colleen A Morris 8 Congenital hypothyroidism genetic and biochemical influences on brain development and neuropsychological functioning Joanne F Rovet and Rosalind Brown 9 Inborn errors of metabolism Kevin M Antshel and Georgianne Arnold 10 Neurodevelopmental effects of childhood exposure to heavy metals lessons from pediatric lead poisoning Theodore I Lidsky Agnes T Heaney Jay S Schneider and John F Rosen 11 Beyond the diagnosis the process of genetic counseling Allyn McConkie Rosell and Julianne O Daniel 12 From diagnosis to adaptation optimizing family and child functioning when a genetic diagnosis is associated with mental retardation Laraine Masters Glidden and Sarah A Schoolcraft 13 When a genetic disorder is associated with learning disabilities Michele M M Mazzocco 14 Early intervention and early childhood special education for young children with neurogenetic disorders Deborah D Hatton 15 The individualized education program navigating the IEP development process Vicki Sudhalter

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Hormone Research ,1997 **Hypothyroidism - Causes, Screening and Therapeutic Approaches** Robert Gensure,2025-07-02 Hypothyroidism is a condition with insidious onset and multiple etiologies Because of this it often goes unrecognized Improved understanding of the pathophysiology of the various forms of hypothyroidism has led to improved screening recommendations to detect the disorder in at risk individuals often before the onset of symptoms While thyroid hormone replacement remains the mainstay of therapy there are efforts to develop treatments for the immune reaction which is responsible for hypothyroidism in most individuals holding promise for a cure This book provides a comprehensive review of our current knowledge of the etiology of hypothyroidism and provides recommendations for screening practices and therapeutic approaches

Recent Advances in Pediatrics: Hot Topics Volume 27 Suraj Gupte,2022-12-25 PART 1 Mega Symposium Topical Issues in Neonatology 1 Newborn Screening 2 Inborn Error of Metabolism 3 Neonatal Cholestasi 4 The Cyanotic Neonate 5 Nutrition Support for the Sick Neonate 6 Metabolic Bone Disease in Premature Neonates 7 Family centered Care A Paradigm of Quality for Sick Newborn Care 8 End of life Care in Nonsalvageable Neonates PART 2 Spotlight Pediatric Nephrology 9 Nutrition Acute in Kidney Injury 10 Emergencies in Acute Kidney Injury 11 Acute Glomerulonephritis 12 Hemolytic Uremic Syndrome 13 Massive Hematuria PART 3 Behavioral and Developmental Issues 14 Internet Addiction 15 Hysterical Conversion Reactions PART 4 Gastroenterology 16 Chronic Diarrhea 17 The Child with Severe Constipation PART 5 Infectious Diseases 18 Childhood Pneumonias 19 Antimicrobial Stewardship Program 20 Urinary Tract Infection Current Management Strategy 21 Invasive Fungal Infections in the Pediatric Intensive Care Unit PART 6 Nutrition 22 Vitamin D Replacement Therapy 23 Nutrition in the Surgical Child 24 Nutritional Management in Growing Pandemic of Diabetes in Children 25 Diet in Cystic Fibrosis PART 7 Adolescent Medicine 26 Emotional and Behavioral Problems of the Adolescents 27 Adolescent Nutrition and Nutritional Problems PART 8 Miscellaneous 28 Diabetic Ketoacidosis Revisited 29 Integrated Management of Newborn and Childhood Illnesses 30 Balance Disorders and Dizziness PART 9 Newly Emerging Topics 31 COVID 19 Pediatric Perspectives 32 COVID 19 Psychological and Psychiatric Impact on Children and Adolescents 33 Human Monkeypox A Growing Outbreak Warranting Urgent Attention Index

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