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Preface

In September 2017, St. Petersburg hosted the 5th ENEA Hyperprolactinemia Workshop on the diagnosis and treatment of hyperprolactinemia and prolactinoma. This special issue of the Neuroendocrinology presents the most interesting and relevant topics discussed at the meeting.

Hyperprolactinemia is the most common endocrine disorder of the hypothalamic-pituitary axis. The causes range from benign conditions which need no treatment to major medical problems requiring multidisciplinary intervention.

To determine the etiology of hyperprolactinemia presents considerable difficulties for a clinician. In the article "Pitfalls in the Diagnostic Evaluation of Hyperprolactinemia," L. Vilar, C.F. Vilar, R. Lyra, and M.C. Freitas provide a detailed account of the main causes of hyperprolactinemia, indicate common errors in the interpretation of increased prolactin levels, and suggest a clear algorithm of actions for identifying major causes of hyperprolactinemia.

Prolactinoma is a clinically relevant cause of hyperprolactinemia, which accounts for approximately 40–60% of functional pituitary neoplasms. In their review "Epidemiology and Management Challenges in Prolactinomas," L. Vroonen, A.F. Daly, and A. Beckers thoroughly analyze data on the prevalence of prolactinomas from a number of studies published in different periods. The authors emphasize that prolactinomas constitute the majority among pituitary tumors. The discrepancies in their prevalence in some studies are explained by different selection criteria. Comprehensive data on the prevalence of prolactinomas in men and women in different age groups are identified, and some features of the course of prolactinomas and their treatment with cabergoline are discussed.

The current strategy for prolactinoma management in postmenopausal women is presented in detail in the article "Hyperprolactinemia/Prolactinomas in the Postmenopausal Period: Challenges in Diagnosis and Management" by S. Pekić, M. Medic Stojanoska, and V. Popovic. The authors describe the features of prolactinomas in this period of a woman's life. They also estimate possible risks of developing cancer and negative effects of hyperprolactinemia on bone health and try to solve the dilemma of whether to or not to treat hyperprolactinemia in postmenopausal women.

Currently, dopamine agonist therapy is the first choice in prolactinoma treatment. A well-presented history of the discovery and use of dopamine agonists is offered by R.S. Auriemma, R. Pirchio, D. De Alcubierre, R. Pivonello, and A. Colao in "Dopamine Agonists – From the 1970s up to Today."

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It is a well-known fact that the majority of prolactinomas respond well to dopamine agonists. However, some of them are resistant. D. Maiter's brilliant review, entitled "Management of Dopamine Agonist-Resistant Prolactinoma," discusses various approaches to determine their resistance and outlines possible molecular mechanisms of resistance, aspects of current treatment, as well as some prospects for managing dopamine agonist-resistant prolactinomas.

According to the data presented in I. Shimon's deeply considered article "Giant Prolactinomas," only 1–5% of all prolactinomas are giant (diameter >40 mm). The author describes the clinical features and current care of giant prolactinomas and emphasizes the need for testosterone replacement therapy due to the development of persistent hypogonadism – even despite normoprolactinemia – in most men.

The review done by an international group of young researches, N.C. Olarescu, L.G. Perez-Rivas, F. Gatto, T. Cuny, M.A. Tichomirowa, G. Tamagno, and M.D. Gahete, "Aggressive and Malignant Prolactinomas" continues the subject of special clinical situations. The authors give a description of aggressive and malignant prolactinomas and analyze the molecular mechanisms underlying their behavior.

J. Trouillas, E. Delgrange, A. Wierinckx, A. Vasiljevic, E. Jouanneau, P. Burman, and G. Raverot present their review in "Clinical, Pathological, and Molecular Factors of Aggressiveness in Lactotroph Tumours." They provide a detailed description of the clinical and biological factors as well as molecular genetic markers of lactotrophic tumors, and thus enable – to a certain extent – to predict their behavior and to identify aggressive and malignant ones at an early stage. They also clarify possible mechanisms of tumor progression, sex-related differences, and main factors of aggressiveness in lactotroph tumors.

Surgery of prolactinomas is conducted if there is intolerance or lack of effectiveness of dopamine agonists. Along with these classical indications, in their article "Surgery for Prolactinomas to Date," M. Buchfelder, Y. Zhao, and S. Schlaffer also identify other equally important indications: firstly, the necessity to reduce the volume of the tumor and, secondly, the case of fairly common but seldom mentioned side effects of prolactinoma therapy with dopamine agonists (cerebrospinal fluid leakage caused by medically induced tumor shrinkage). The authors also describe some features of the surgical technique and surgery outcomes.

Trying to develop the subject of their reviews as completely as possible, the authors of different articles unintentionally (but naturally) comment on the same problems, express their point of view, and thus complement each other and provide in-depth knowledge and understanding of the issue.

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