Pituitary (2017) 20:2–3
DOI 10.1007/s11102-017-0790-1

Acromegaly, a *pituitary* special issue

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Published online: 1 March 2017

Acromegaly is a fascinating disorder one that still poses a clinical challenge to endocrinologists more than 130 years after Pierre Marie described a new disease, "*l'acromegalie*" and centuries after initial detailed observations pertaining to classical disease features.

The surgical management of pituitary adenomas has undergone innovative progress with the endoscopic endonasal approach. However, even in the hands of the most experienced neurosurgeons, growth hormone (GH) excess may persist in a large number of patients due to the presence of remnant post-operative tumor tissue. Treatment of these patients or those who cannot undergo, or do not prefer surgery has been facilitated over the past two decades by the advent of highly specific and selective pharmacological agents. Other newer treatment modalities, such as stereotactic radiosurgery, have also been incorporated into the management paradigm.

International consensus and clinical guidelines for diagnosis and treatment of acromegaly have been published. Hence, this *Pituitary* special issue appears at an optimal time to gather current knowledge and understanding of acromegaly.

Drs Lavrentaki, Paluzzi, Wass and Karavitaki discuss caveats of recent epidemiologic studies of acromegaly. Total prevalence ranges from 2.8 to 13.7 cases and the annual incidence between 0.2 and 1.1 cases/100,000 people, respectively, with most patients having a macroadenoma at diagnosis. New discoveries in genetics of acromegaly are eloquently illustrated by Drs Gadelha, Kasuki and Korbonits.

Diagnosis of acromegaly encompasses both a clinical and biochemical aspect. Drs Vilar, Freitas Vilar, Lyra and Naves detail specific clinical features of diagnosis of GH excess and Drs Schilbach, Strasburger, and Bidlingmaier review assay pitfalls for GH and IGF1 and provide an essential overview of methodological and biological variables affecting biochemical assessment of acromegaly.

Persistent GH excess is associated with excess morbidity and mortality. Drs. Pivonello, Auriemma, Grasso, Pivonello, Simeoli, Patalano, Galdiero, and Colao appraised the cardiovascular, respiratory and metabolic complications, while Drs Mazziotti, Maffezzoni, Frara and Giustina discuss new data on osteopathic disease associated with GH excess. Drs Tirosh and Shimon further review other noteworthy complications, the association of acromegaly with thyroid and colon pathology.

New advances in the surgical treatment of acromegaly are emphasized by Drs Buchfelder and Schlaffer. The importance of morphologic classification and identification of different subgroups of patients with GH - producing adenomas and their impact on prognosis and clinical management is discussed by Drs Syro, Rotondo, Serna, Ortiz and Kovacs.

Medical therapy plays a significant role in the management of acromegaly. The role of somatostatin and dopamine receptor regulation of pituitary somatotroph adenomas is illustrated by Drs Ben-Shlomo, Liu and Melmed, while Drs Gadelha, Wildemberg, Bronstein, Gatto and Ferone detail new data on efficacy and safety of all somatostatin receptor ligands (SRLs), including the newly approved multiligand SRL; pasireotide. Drs Paragliola, Corselllo and

Maria Fleseriu and Monica Gadelha are the guest editors.

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Salvatori review causes of SRL resistance. Drs Potorac, Beckers and Bonneville offer their perspective on the use of a specific MRI pattern in predicting response to medical therapy.

The role of cabegoline in treating patients with acromegaly is appraised by Drs Kuhn and Chanson, and Drs Tritos and Biller discuss the efficacy, safety of pegvisomant and its place in the treatment armamentarium for patients with GH excess. Combination therapy has been increasingly employed in the recent years and Drs Lim and Fleseriu assess the most recent studies and examine the pros and cons of different combination regimens. New medical therapies on the horizon with new mechanisms or new delivery modes are discussed by Dr Biermasz who reviews the phase III results of a novel oral octreotide, still under investigation.

Radiation therapy remains third line in the treatment algorithm for most patients with acromegaly. Dr Gheorgiu illustrates the updates in the efficacy and safety of pituitary radiation, with an emphasis on new stereotactic radiation techniques.

Aggressive GH-secreting pituitary adenomas (GHPA) represent an important clinical problem in patients with acromegaly and Drs Donoho, Bose, Zada and Carmichael enunciate criteria, which could link aggressive GHPA to the existing category of WHO atypical adenomas and review their complex, multidisciplinary treatment.

With new fertility treatment options, there have been more pregnancies reported in patients with acromegaly. Drs Muhammad, Neggers and van der Lely discuss that while there is no indication to routinely use medication to control GH hypersecretion or tumor size in acromegaly patients during pregnancy, dopamine agonists, SRLs and GH receptor antagonists have been used in selected patients with good outcomes for both mother and children.

Reduced health-related quality of life (QoL) has been described in patients with both active acromegaly and after remission. Drs Crespo, Valassi and Webb emphasize that including the assessment of QoL in daily clinical practice has become fundamental to understand the consequences of acromegaly and the impact on the patients' daily life.

We are grateful to our colleagues across the world, leading international experts who have shared their vast experience in these short, up-to date articles. We would like to thank the many patients who have participated in clinical research trials over the years and have enabled discovery of new treatments.

Our sincere thanks to Shlomo Melmed, *Pituitary* editor-in-chief, contributing authors, and Springer editorial staff for an erudite and timely issue.

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