Growth Hormone

ENDOCRINE UPDATES

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Preface - Bengt-Åke Bengtsson

Ten years ago, many endocrinologists were still skeptical that growth hormone (GH) played an active role in adult metabolism. This is, perhaps, surprising given that GH deficiency (GHD) in adulthood had been "recognized" as long ago as in the 1960's. At that time Falkheden reported on patients who were treated with hypophysectomy (1). After the operation, the patients displayed symptoms now considered typical of GHD, including reductions in basal metabolic rate, cardiac output, heart rate, stroke volume, glomerular filtration rate and red cell volume. In a case history, reported one year earlier, Raben described a 35-year old female patient who was treated for hypopituitarism for eight years with standard hormone replacement therapy, and then given, additionally, human GH, 3 mg three times per week (2). After 2 months of GH treatment, the patient noticed "increased vigor, ambition and sense of well-being". Later investigations into quality of life after GH replacement therapy in adults were to confirm these earlier findings.

During the last 10 years studies have shown that GHD in adulthood is a far-reaching syndrome associated with abnormal body composition, reduced bone mineral density with an increased fracture rate, increased cardiovascular morbidity, and impaired cardiac function, as well as reduced exercise performance and decreased psychological well-being. Importantly, it is also clear, from placebo-controlled trials, that GH replacement therapy can normalize body composition, increase bone mineral content and improve the cardiovascular risk factor profile. GH replacement therapy also improves cardiac performance and exercise capacity, increases muscle strength and improves well-being and quality of life.

Some of the signs and symptoms of GHD are reminiscent of other familiar disease processes, and the known effects of GH replacement therapy suggest that GH could be indicated for conditions other than GHD. In this book some of the potential uses of GH outside classical endocrinology are being discussed. In this new, exciting development it is important that endocrinologists take leadership in exploring the potential role of GH in these conditions.

The aim of this book is to provide a critical update of current knowledge about adult GHD and the future role of GH/IGF-1 in adult medicine. For this purpose, contributions from a number of research groups have been generated. It is my hope that the book may serve not only as an introduction to the field, but also stimulate further research within this exciting area.

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