Abstract

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Title of the rigorous thesis: **Acromegaly in patients with somatotroph pituitary adenomas – determining the expression level of proteins with a potential influence on the therapeutic response**

Acromegaly is a rare disease manifested by a wide variety of symptoms (enlargement of the acral parts of the body, macroglossia, neuropathy, hypertension, cardiomyopathy etc.). These symptoms significantly decrease quality of life and shorten life span. It is caused by increased secretion of growth hormone in adulthood. The cause of this increased secretion is most often a somatotroph adenoma.

In most cases, the treatment of acromegaly requires a comprehensive approach. It is a combination of surgical intervention, radiotherapy and pharmacotherapy. Somatostatin analogues are mainly used in pharmacotherapy. These compounds have similar pharmacodynamic effects as somatostatin after binding to the somatostatin receptor. The administration of these compounds leads to a decrease in the secretory activity of the tumour and subsequently to the reduction of its volume. Octreotide and lanreotide belong to the first generation of SSA (these represent the most widely used medical treatment for acromegaly today) while pasireotide belongs to the second generation.

Therapeutic response to SSA varies significantly between individual patients. Exact factors that could clearly predict response to this treatment are not known. The expression of SSTR2 is currently considered to be the most important indicator of the response.

This thesis addresses detailed analysis of proteins that may affect the efficiency of SSA treatment, these are 4 subtypes of SSTR (SSTR1, 2, 3, and 5), D2DR and E-cadherin.