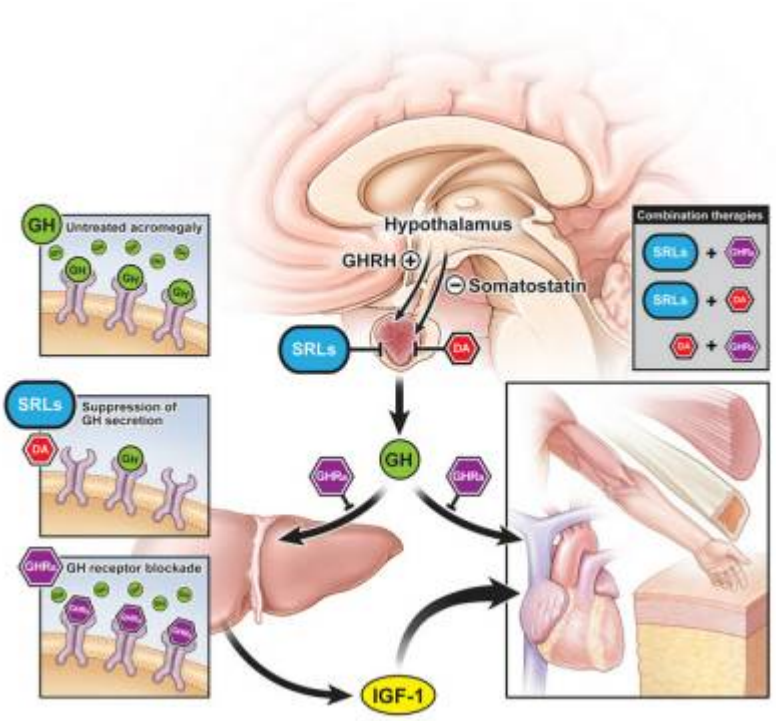
Acromegaly medical treatment



Medical treatment

Indications

Patients not cured by surgery.

Who cannot tolerate surgery.

Recurrence after surgery or radiotherapy.

More satisfactory surgical outcomes for noninvasive macroadenomas treated with presurgical SA may be achieved, although controversy of such adjuvant therapy exists. Combination of SA and pegvisomant or cabergoline shows advantages in some specific cases. Thus, an individual treatment program should be established for each patient under a full evaluation of the risks and benefits [1)].

First-generation somatostatin receptor ligands (SRL) are the mainstay of acromegaly treatment, however the percentage of patients controlled with these drugs significantly varies in the different studies. Many factors are involved in the resistance to SRL.

In a review, Gadelha et al., updated the physiology of somatostatin and its receptors (sst), the use of SRL in the treatment of acromegaly and the factors involved in the response to these drugs. The SRL act through interaction with the sst, which up to now have been characterized as five subtypes. The first-generation SRL, octreotide and lanreotide, are considered sst2 specific and have biochemical response rates varying from 20 to 70%. Tumor volume reduction can be found in 36-75% of patients.

Several factors may determine the response to these drugs, such as sst, aryl hydrocarbon receptor interacting protein (AIP), E-cadherin, ZAC1, filamin A and β-arrestin expression in the somatotropinomas. In patients resistant to first-generation SRL, alternative medical treatment options include: SRL high dose regimens, SRL in combination with cabergoline or pegvisomant, or the use of pasireotide. Pasireotide is a next-generation SRL with a broader pattern of interaction with sst. In the light of the recent increase of treatment options in acromegaly and the deeper knowledge of the determinants of response to the current first-line therapy, a shift from a trial-and-error treatment to a personalized one could be possible [2].

The cost of treatment including medications and the possibility of major side effects represent important limitations of the medical therapy [3] [4].

The most widely used criteria for neurosurgical outcome assessment were combined measurements of IGF-1 and GH levels after oral glucose tolerance test (OGTT) 3 months after surgery. Ninety-eight percent of respondents stated that primary treatment with somatostatin receptor ligands (SRLs) was indicated at least sometime during the management of acromegaly patients. In nearly all centers (96%), the use of pegvisomant monotherapy was restricted to patients who had failed to achieve biochemical control with SRL therapy. The observation that most centers followed consensus statement recommendations encourages the future utility of these workshops aimed to create uniform management standards for acromegaly [5]

Current pharmacotherapy includes somatostatin analogs (SAs) and GH receptor antagonist; the former consists of lanreotide Autogel (ATG) and octreotide long-acting release (LAR), and the latter refers to pegvisomant. As primary medical therapy, lanreotide ATG and octreotide LAR can be supplied in a long-lasting formulation to achieve biochemical control of GH and IGF-1 by subcutaneous injection every 4-6 weeks. Lanreotide ATG and octreotide LAR provide an effective medical treatment, whether as a primary or secondary therapy, for the treatment of GH-secreting pituitary neuroendocrine tumor; however, to maximize benefits with the least cost, several points should be emphasized before the application of SAs. A comprehensive assessment, especially of the observation of clinical predictors and preselection of SA treatment, should be completed in advance. A treatment process lasting at least 3 months should be implemented to achieve a long-term stable blood concentration. More satisfactory surgical outcomes for noninvasive macroadenomas treated with presurgical SA may be achieved, although controversy of such adjuvant therapy exists. Combination of SA and pegvisomant or cabergoline shows advantages in some specific cases. Thus, an individual treatment program should be established for each patient under a full evaluation of the risks and benefits [6].

Somatostatin treatment can induce extensive fibrosis in GH secreting pituitary neuroendocrine tumor [7].

Somatostatin Analogs

Somatostatin Analogs in Acromegaly

References

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