Dopamine Agonist

A dopamine agonist is a compound that activates dopamine receptors in the absence of dopamine. Dopamine agonists activate signaling pathways through the dopamine receptor and trimeric Gproteins, ultimately leading to changes in gene transcription.

Bromocriptine

Cabergoline

Pergolide

Dopamine agonists (DAs) are the first-line treatment for prolactinomas. DAs primarily target the dopamine D2 receptor (D2R).

Dopamine agonist therapy is the first line of treatment for prolactinomas because of its effectiveness in normalizing serum prolactin levels and shrinking tumor size. Though withdrawal of dopamine agonist treatment is safe and may be implemented following certain recommendations, recurrence of disease after cessation of the drug occurs in a substantial proportion of patients. Concerns regarding the safety of dopamine agonists have been raised, but its safety profile remains high, allowing its use during pregnancy. Surgery is typically indicated for patients who are resistant to medical therapy or intolerant of its adverse side effects, or are experiencing progressive tumor growth. Surgical resection can also be considered as a primary treatment for those with smaller focal tumors where a biochemical cure can be expected as an alternative to lifelong dopamine agonist treatment. Stereotactic radiosurgery also serves as an option for those refractory to medical and surgical therapy ¹.

From the beginning of the 20th century, acromegaly could be treated by pituitary surgery and/or radiotherapy. After 1970, medical therapies were introduced that could control acromegaly. First, dopamine agonists were introduced, followed by somatostatin analogues and GH-receptor blockers.

They are efficient in less than 20% of non-irradiated acromegaly patients. They are a good costeffective alternative for carefully selected patients $^{2)}$.

Patients who are deemed dopamin agonist (DA) resistant or cannot tolerate DA treatment can be referred for surgery and less ideally radiosurgery. There is controversy over the length of DA treatment before declaring a patient resistant to therapy and exploring other options. While some patients do experience regression of their tumors only after a few months on DA therapy, longer duration of DA has been associated with increased fibrosis in the tumor, potentially making surgical treatment more difficult and risky ³.

1)

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