Cushing's disease treatment

First-line treatment is transsphenoidal surgery (TSS) with the aim of complete adenoma removal and preservation of pituitary gland function. As complete adenoma resection is not always possible, surgical failure is a common problem. This can be the case either due to persistent hypercortisolism after first TSS or recurrence of hypercortisolism after initially achieving remission. For these scenarios exist several therapeutic options with their inherent characteristics [1].

Octreotide is quite effective in such tumors and can be used as adjuvant therapy.

Traditional radiotherapy using external beam radiation is used to complement surgery in inoperable cases or in patients declining surgery. The major drawbacks include delayed onset of action and high incidence of panhypopituitarism.

Successful resection results in immediate biochemical remission with preservation of pituitary function.

Bilateral adrenalectomy BLA is indicated in cases of persistent disease following pituitary surgery or in situations where rapid normalization of hypercortisolism is required [2] [3].

Surgery

see Cushing's disease surgery

Corticotroph adenoma medical treatment

Corticotroph adenoma medical treatment.

Corticotroph adenoma radiosurgery

see Corticotroph adenoma radiosurgery

Case series

Stolyarov et al. retrospectively analyzed data extracted from in-hospital electronic medical records for CD surgeries between January 1991 and September 2015. We compared cortisol levels and collection times, ACTH measurement, and postoperative and discharge GC treatment before and after consensus statement publication in July 2008.

107 surgeries were performed in 92 patients with CD. After 2008, more surgeries had at least one cortisol value assessed (67.9% before vs. 91.3% after, $p = 0.033$), with median initial cortisol measurement at 14 h post-surgery. However, ACTH measurement remained unchanged (42.9% vs. 43.5%; $p > 0.99$). Cortisol collection during GC treatment tended to increase (32.7% vs. 57.1%;

p = 0.068). Of surgeries performed without prior GC treatment, 31.7 and 55.0% had a cortisol nadir of < 2 and < 5 µg/dL, respectively, within 72 h postoperative.

The physicians were more diligent in measuring in-hospital postoperative cortisol levels consistent with 2008 consensus recommendations. Better management of cortisol measurements and their timing is an opportunity for improvement [4].

1)
Rubinstein G, Osswald A, Zopp S, Ritzel K, Theodoropoulou M, Beuschlein F, Reincke M. Therapeutic options after surgical failure in Cushing's disease: A critical review. Best Pract Res Clin Endocrinol Metab. 2019 Apr 16. pii: S1521-690X(19)30013-2. doi: 10.1016/j.beem.2019.04.004. [Epub ahead of print] Review. PubMed PMID: 31036383.
2)
Dekkers OM, Biermasz NR, Pereira AM, Roelfsema F, van Aken MO, Voormolen JH, et al.: Mortality in patients treated for Cushing's disease is increased, compared with patients treated for nonfunctioning pituitary macroadenoma. J Clin Endocrinol Metab 92:976–981, 2007
3)
Oßwald A, Plomer E, Dimopoulou C, Milian M, Blaser R, Ritzel K, et al.: Favorable long-term outcomes of bilateral adrenalectomy in Cushing's disease. Eur J Endocrinol 171:209–215, 2014
4)
Stolyarov Y, Mirocha J, Mamelak AN, Ben-Shlomo A. Consensus-driven in-hospital cortisol assessment after ACTH-secreting pituitary neuroendocrine tumor resection. Pituitary. 2017 Nov 16. doi: 10.1007/s11102-017-0845-3. [Epub ahead of print] PubMed PMID: 29143885.