



TEN BEST READINGS ON HYPOTHALAMIC-PITUITARY TUMORS

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The 10 best recent articles in the medical literature relating to hypothalamic-pituitary tumors are reviewed here.

Flanagan DE, Ibrahim AE, Ellison DW. Inflammatory hypophysitis: the spectrum of disease. *Acta Neurochir.* 2002;144: 47-56.

Inflammatory conditions of the pituitary (divided into lymphocytic and granulomatous hypophysitis) are rare and may mimic pituitary adenomas. Radiologically, lesions may be solid or cystic, with a thickened hypothalamic-pituitary stalk present in approximately half of the cases. Hypopituitarism is common at presentation. Although there are no striking features in the clinical presentation to distinguish pituitary inflammation from pituitary adenoma, the prognosis of hypophysitis is generally good.

de Herder WW, Lamberts SW. Somatostatin and somatostatin analogues: diagnostic and therapeutic uses. *Curr Opin Oncol.* 2002;14:53-57.

Somatostatin and its octapeptide analogues exert their effects through interaction with somatostatin receptor subtypes 1-5 (sst 1-5). Somatostatin binds with high affinity to all sst subtypes, whereas the currently commercially available octapeptide analogs only bind strongly to sst 2 and sst 5, the predominant variants found in GH-secreting pituitary tumors. In patients harboring sst 2- or sst 5-positive pituitary or other neuroendocrine tumors, clinical symptomatology can be controlled by chronic administration of one of the currently commercially available octapeptide somatostatin analogs. Tumors and metastases bearing sst 2 or sst 5 can be visualized in vivo after injection of radiolabeled octapeptide analogs,

which, in some cases, can also be used for radiotherapy.

Muller HL, Bueb K, Bartels U, et al. Obesity after childhood craniopharyngioma: German multicenter study on pre-operative risk factors and quality of life. *Klin Padiatr.* 2001;213:244-249.

Nearly 50% of children and adolescents who undergo surgery for treatment of craniopharyngiomas develop severe obesity within the first 3 postoperative years. Risk appears related to larger tumor size, the presence of hydrocephalus requiring shunt placement, hypothalamic involvement, and taller stature at diagnosis.

Davis JR, McNeilly AS. Is pituitary gene therapy realistic? *Clin Endocrinol.* 2001;55:427-433.

Recombinant adenoviruses have been studied in detail as potential vectors for gene delivery because of their ability to transduce the postmitotic, nondividing cells of the pituitary gland. Feasibility of high-level transgene expression has been shown in vivo, but so far requires stereotaxic intrapituitary injection to achieve adequate transduction. Ablation of pituitary cells has been shown in cultured cell lines and in subcutaneous tumors in nude mice, although other animal models are required to evaluate efficacy in more slowly proliferating tumors, as are found in humans.

Lienhardt A, Grossman AB, Dacie JE, et al. Relative contributions of inferior petrosal sinus sampling and pituitary imaging in the investigation of children and ado-

lescents with ACTH-dependent Cushing's syndrome. *J Clin Endocrinol Metab.* 2001;86:5711-5714.

Selective transsphenoidal microadenectomy is the first-line treatment of childhood Cushing's disease. Accurate preoperative, site-specific localization of a corticotroph adenoma is an important step in its investigation. This can be accomplished with high reliability when performed in an experienced center using a combination of inferior petrosal sinus sampling for ACTH after corticotropin-releasing hormone stimulation and state-of-the-art pituitary imaging.

Frajese G, Drake WM, Loureiro RA, et al. Hypothalamic-pituitary surveillance imaging in hypopituitary patients receiving long-term GH replacement therapy. *J Clin Endocrinol Metab.* 2001;86:5172-5175.

Most cases of adult-onset growth hormone (GH) deficiency result from the presence of hypothalamic-pituitary tumors or the regimens used to treat the tumors. GH replacement is now widely used in adults with hypopituitarism, but its effect on hypothalamic-pituitary tumor regrowth or recurrence is unknown. In 100 consecutive patients with pituitary or peripituitary tumors, of whom 91 received external radiotherapy and who all received GH replacement (titrated to maintain a normal serum IGF-I level) for up to 4 years, tumor recurrence was rare.

van der Lely AJ, Hutson RK, Trainer PJ, et al. Long-term treatment of acromegaly with pegvisomant, a growth hormone receptor

antagonist. *Lancet.* 2001;358:1754-1759.

Pegvisomant is a new growth hormone receptor antagonist that improves symptoms and normalizes serum IGF-1 levels in a high proportion of patients with acromegaly treated for up to 12 weeks. In this study, pegvisomant was administered to 160 patients with acromegaly for an average of 425 days. Of the patients treated for 12 months or more, 87 of 90 (97%) achieved normal serum IGF-1 concentrations. Treatment also resulted in a significant reduction in tumor volume. No significant side effects were noted. While pegvisomant appears to be a remarkable advance in the medical treatment for acromegaly, its role in the overall treatment strategy of acromegaly remains to be determined.

Elhadd TA, Abdu TA, Clayton R. Hypopituitarism and atherosclerosis. *Ann Med.* 2001;33:477-485.

Hypopituitarism has recently been shown to be associated with an increased death rate from vascular events. Retrospective cohort data have provided evidence of premature atherosclerosis in these patients, especially in women. The mechanisms for such propensity to atherosclerotic vascular disease are not clear. Addressing abnormal hormonal factors, especially in women, is a primary objective in managing these patients clinically and in research trials designed to reduce the risk of atherosclerotic vascular disease in patients with hypopituitarism. While short-term GH treatment may reduce some of the vascular risk factors and improve endothelial function, it

remains to be shown whether this will translate into long-term reduction in morbidity and mortality from vascular disease.

Aron DC, Howlett TA. Pituitary incidentalomas. *Endocrinol Metab Clin North Am.* 2000;29:205-221.

The optimal strategy for hormonal screening of a patient with any incidentally discovered pituitary mass (and no signs or symptoms of hormone excess) is unknown. Of note, clinically diagnosed hormone-secreting pituitary tumors are far less common than incidentalomas, and only approximately 0.5% of patients with incidentalomas appear to be at increased risk for morbidity and mortality. The approach to such patients should be based on good clinical judgment drawn from the best available evidence and should be complemented, but not replaced, by judiciously acquired laboratory data.

Parsa CE, Hoyt CS, Lesser RL, et al. Spontaneous regression of optic gliomas: thirteen cases documented by serial neuroimaging. *Arch Ophthalmol.* 2001;119:516-529.

Large, clinically symptomatic optic pathway gliomas may occur in patients with and without neurofibromatosis type 1 (NF-1). Large, clinically symptomatic optic gliomas may undergo spontaneous regression. Thus, the possibility of spontaneous regression of an optic glioma (in patients with or without underlying NF-1) should be considered in the planning of potential vision-sacrificing treatment of patients with these tumors.