Non-Functioning Pituitary Neuroendocrine Tumor Systematic Reviews

- Quality of life in non-functioning pituitary adenoma: A systematic review
- Pituitary apoplexy: a systematic review of non-gestational risk factors
- Excess mortality in patients with non-functioning pituitary adenoma: a systematic review and meta-analysis
- Natural History of Non-Functioning Pituitary Adenomas: A Systematic Review and Meta-Analysis
- The clinicopathological features and prognosis of silent corticotroph tumors: an updated systematic review and meta-analysis
- Reported outcomes in transsphenoidal surgery for pituitary adenomas: a systematic review
- Post-operative surveillance for somatotroph, lactotroph and non-functional pituitary adenomas after curative resection: a systematic review
- Treatment of non-functioning pituitary adenoma with cabergoline: a systematic review and meta-analysis

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Surgical resection is the main Clinically Non-Functioning Pituitary Neuroendocrine Tumor Treatment. Fong et al. aimed to analyze the impact of surgical approach, completeness of resection, and postoperative radiotherapy on long-term progression-free survival (PFS) of NFPA, using individual patient data (IPD) meta-analysis.

An electronic literature search was conducted on PubMed, EMBASE, and Web of Science from database inception to 6 November 2022. Studies describing the natural history of surgically resected NFPA, with the provision of Kaplan-Meier curves, were included. These were digitized to obtain IPD, which was pooled in one-stage and two-stage meta-analyses to determine hazard ratios (HRs) and 95%CIs of gross total resection (GTR) versus subtotal resection (STR), and postoperative radiotherapy versus none. An indirect analysis of single-arm data between endoscopic endonasal (EES) and microscopic transsphenoidal (MTS) surgical techniques were also performed.

Altogether, eleven studies (3941 patients) were retrieved. PFS was significantly lower in STR than GTR (shared-frailty HR 0.32, 95%CI 0.27-0.39, $p < 0.001$). Postoperative radiotherapy significantly improved PFS compared to no radiotherapy (shared-frailty HR 0.20, 95%CI 0.15-0.26, $p < 0.001$), including in the subgroup of patients with STR (shared-frailty HR 0.12, 95%CI 0.08-0.18, $p < 0.001$). Similar PFS was observed between EES and MTS (indirect HR 1.09, 95%CI 0.92-1.30, $p = 0.301$).

This systematic review and patient-level meta-analysis robustly prognoses of surgically treated NFPA. They reinforce current guidelines stating that GTR should be the standard of surgical resection. Postoperative radiotherapy is of considerable benefit, especially for patients with STR. The surgical approach does not significantly affect long-term prognosis.

Registration: PROSPERO CRD42022374034 [1].

1)

Fong KY, Lim MJR, Fu S, Low CE, Chan YH, Deepak DS, Xu X, Thong M, Jain S, Teo K, Gardner PA, Snyderman CH, Nga VDW, Yeo TT. Postsurgical outcomes of nonfunctioning pituitary adenomas: a patient-level meta-analysis. Pituitary. 2023 Jun 30. doi: 10.1007/s11102-023-01335-2. Epub ahead of

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