

Effectiveness of Perioperative Dexamethasone in Reducing Vocal Dysfunction in Patients Undergoing Thyroidectomy: A Systematic Review and Meta-analysis

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Background/Aim:

Thyroidectomy is a relatively safe surgical procedure with mortality and morbidity rates of less than 2–3%. Voice dysfunction is a common complications in post-thyroidectomy patients with an incidence rate, i.e., 87% of all surgical cases. The effects of Prophylactic dexamethasone on postoperative voice outcomes remain unclear. Therefore, we aim to assess the efficacy of perioperative dexamethasone administration in improving post- thyroidectomy voice dysfunction.

Methods:

We searched the Medline, Embase, and Cochrane Central Register of Controlled Trials (CENTRAL) databases. Randomized controlled trials (RCTs) that compared intravenous dexamethasone administration with placebo in patients undergoing thyroidectomy were included. Main outcome was the difference in postoperative voice dysfunction between groups. Standardized mean difference (SMD) and 95 % confidence intervals (CIs) were estimated using fixed and random effects models.

Results:

A total of eight RCTs (1244 participants) contributed to the main analysis. Treatment with dexamethasone was associated with statistically significantly lower voice dysfunction scores than placebo treatment (SMD: -0.55, 95% CI, -0.82 to -0.28, $P < 0.001$) with substantial heterogeneity of ($I^2 = 67.6\%$). Subgroup analysis showed significant voice dysfunction reduction on day 1 (SMD: -0.55, 95% CI, -0.84 to -0.26, P

< 0.001) and day 2 (SMD: -0.38, 95% CI, 0.75 to -0.01, $P < 0.001$) after thyroidectomy in dexamethasone group. No significant difference was noticed on day 7 (SMD: -0.23, 95% CI, -0.80 to 0.34, $P=43$).

Conclusion:

Overall, a single perioperative administration of dexamethasone was significantly effective in reducing short-term voice disturbances after thyroidectomy.