

# Efficacy of Anterior Lateral Electrode compared with Anterior Posterior Electrode in External Cardioversion of Atrial Fibrillation. A Meta-analysis of clinical trials

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**Background:** Some clinical trials reported conflicting results about the efficacy of anterior lateral electrode compared with anterior posterior electrode in electrical cardioversion of atrial fibrillation, and some studies reported no difference in the efficacy between the two procedures. Our aim is to perform a meta-analysis to compare the efficacy of anterior lateral electrode versus anterior posterior electrode in external cardioversion of atrial fibrillation.

**Methods:** We searched the following databases: PUBMED, WOS, OVID and SCOPUS. Inclusion criteria were clinical trials that compared anterior lateral electrode with anterior posterior electrode in external cardioversion of atrial fibrillation. We excluded cohort studies, case reports, editorials and animal studies. RevMan software (5.4) was used to perform the meta-analysis. Cardioversion rate outcome was presented as Odds ratios (OR) with 95% confidence interval (CI).

**Conclusion:** Our meta-analysis revealed that anterior lateral electrode is more effective than anterior posterior electrode in external cardioversion of atrial fibrillation. Subgroup analysis showed that patients who received less than 5 shocks, patients with 60 years-old or more and patients with left atrial diameter > 45 mm benefit from anterior lateral electrode more than anterior posterior electrode in external cardioversion of atrial fibrillation.

**Results:** After full text screening, 11 trials were included in the analysis. The total number of patients included in the study is 1845. The pooled analysis showed a statistically significant association between anterior lateral electrode and increased cardioversion rate of atrial fibrillation compared with anterior posterior electrode (OR = 1.40, 95% CI = 1.02 to 1.92, p-value = 0.04). We observed no heterogeneity among studies ( $P = 0.14$ ,  $I^2 = 32\%$ ). No publication bias was observed. Subgroup analysis revealed a statistically significant association between anterior lateral electrode and increased cardioversion rate of atrial fibrillation compared with anterior posterior electrode in subgroups of less than 5 shocks, patients with 60years-old or more and patients with left atrial diameter > 45 mm ( OR= 1.72 , 95% CI = 1.17 to 2.54 , p value = 0.006 ), ( OR= 1.73 , 95% CI = 1.18 to 2.54 , p value= 0.005 ), and ( OR= 1.86 , 95% CI = 1.04 to 3.34 , p value = 0.04), respectively.