OBJECTIVES: To assess the relative efficacy of umecilindium bromide 62.5 mg OD (UMEC) versus tiotropium bromide 18 mcg OD (TO), aclidinium bromide 400 mcg OD (AB), and glycopyrronium bromide 50 mcg OD (GLYCO). METHODS: A systematic literature review was performed to identify RCTs ≥ 12 weeks duration comparing TIO, AB, GLYCO or UMEC to placebo in adult patients with COPD. Random effects meta-analysis was performed by pooling results of each treatment arm with the random-effects model with change from baseline at 12 and 24 weeks in trough FEV1 values vs. TIO (p < 0.05) 18. STATISTICAL ANALYSIS: Results were synthesized by using an indirect treatment comparison (ITC) framework based on the Bucher method. Scenario analyses were performed to evaluate the robustness of the results to various modifications of the included studies and assumptions. RESULTS: At 12 weeks, ITC results showed that treatment with UMEC resulted in a comparable but numerically higher change from baseline than in trough FEV1 compared to TIO (95%CI: -11.19, 55.23, p < 0.01). At 24 weeks, UMEC resulted in comparable trough FEV1 values vs. TIO (p < 0.01) and AB (p < 0.05). Aedicium also resulted in comparable TDI focal scores and rescue medication use at both time points compared with TIO, AB and GLYCO. UMEC resulted in numerically lower (better) change from baseline at 12 weeks in SGRQ total score compared to TIO (p < 0.001) and AB (p < 0.05). At 24 weeks, UMEC resulted in comparable change from baseline in TDI scores and rescue medication use at both time points compared with TIO, AB and GLYCO. DISCUSSION: UMEC showed comparable efficacy to TIO, AB and GLYCO and was numerically superior to TIO and AB at 24 weeks. The age-specific anaphylactic shock event rates (per 100,000 person-years (crude rate) were identified. The annualized anaphylactic shock event rate was 0.235, 0.10 and 0.77 per 100,000 person-years in the three groups, respectively. The age-specific anaphylactic shock event rates were identified. The annualized anaphylactic shock event rate was 0.235, 0.10 and 0.77 per 100,000 person-years in the three groups, respectively. The annualized anaphylactic shock event rate was 0.235, 0.10 and 0.77 per 100,000 person-years in the three groups, respectively. The annualized anaphylactic shock event rate was 0.235, 0.10 and 0.77 per 100,000 person-years in the three groups, respectively. The annualized anaphylactic shock event rate was 0.235, 0.10 and 0.77 per 100,000 person-years in the three groups, respectively. The annualized anaphylactic shock event rate was 0.235, 0.10 and 0.77 per 100,000 person-years in the three groups, respectively.