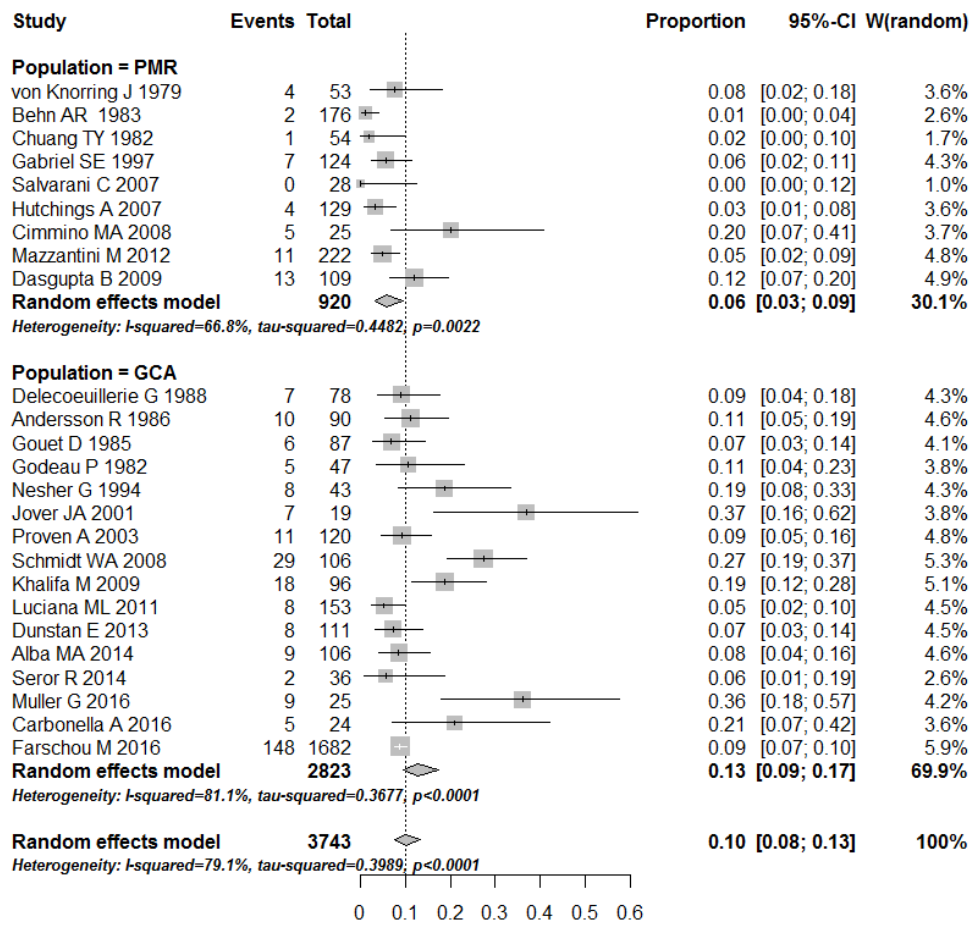


TITLE: What is the absolute risk of developing diabetes mellitus in patients with glucocorticoid treated polymyalgia rheumatica and giant cell arteritis? A systematic review and meta-analysis

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Polymyalgia rheumatica (PMR) and giant cell arteritis (GCA) are almost always treated with glucocorticoids (GCs) but long-term GC use is associated with diabetes mellitus (DM). The absolute incidence of this complication in this patient group remains unclear. The aim of this study was to quantify the absolute risk of GC-induced DM in PMR and GCA from published literature. We identified literature from inception to February 2017 reporting diabetes following exposure to oral GC in patients with PMR and/or GCA without pre-existing diabetes. A random-effects meta-analysis was performed to summarise the findings. 25 eligible publications were identified. In studies of patients with GCA, mean cumulative GC dose was almost 1.5 times higher than in studies of PMR (8.2g vs 5.6g), with slightly longer treatment duration and longer duration of follow-up (6.4 years vs 4.4 years). The incidence proportion (cumulative incidence) of patients who developed new-onset DM was 6% (95%CI: 3-9%) for PMR and 13% (95%CI: 9-17%) for GCA. Based on UK data on incidence rate of DM in the general population, the expected background incidence rate of DM over 4.4 years in PMR patients and 6.4 years in GCA patients (follow-up duration) would be 4.8% and 7.0%, respectively. Heterogeneity between studies was high ($I^2=79.1\%$), as there were differences in study designs, patient population, geographical locations and treatment. Little information on predictors of DM was found. Our meta-analysis produced plausible estimates of DM incidence in patients with PMR and GCA but there is insufficient published data to allow precise quantification of DM risk.



Proportion of PMR and GCA patients who developed new-onset DM after GC use