Effect of DPP4 Inhibitors on Microvascular Outcomes: A Meta-analysis of Cardiovascular Outcome Trials

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Background & Aims

Microvascular complications in type 2 diabetes represent a significant clinical burden:

Renal Ocular Neuropathic

This **meta-analysis** evaluates the protective effects of DPP4 inhibitors on microvascular outcomes in large cardiovascular outcome trials.

Material and Methods

Random effects meta-analysis applied to four randomized, double-blind, placebo-controlled trials of DPP4 inhibitors.

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• RCTs Analysed

43,522

• Participants

Selection Criteria: Long-term follow-up **(>1 year)** and microvascular outcomes of interest.

Results: DPP4 inhibitors reduced the risk of.....

Microalbuminuria by 8%
(RR: 0.92, 95% CI 0.84-1.00, *p=0.04*)
[Figure-1]

ESRD by 5%
(RR: 0.95, CI 0.75-1.20, *p=0.66*)

No change in Ocular outcomes
(RR 0.99, 95% CI 0.59-1.68, *p=0.98*)

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Risk Ratio M-H, Random, 95% CI
Green et al	552	7332	553	7339	28.5%	1.00 [0.89, 1.12]
Rosenstock et al	745	3494	810	3485	35.7%	0.92 [0.84, 1.00]
Scirica et al	833	8280	969	8212	35.8%	0.85 [0.78, 0.93]
Total (95% CI)		19106		19036	100.0%	0.92 [0.84, 1.00]
Total events	2130		2332			

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 4.78$, $df = 2$ ($P = 0.09$); $I^2 = 58\%$
Test for overall effect: $Z = 2.03$ ($P = 0.04$)

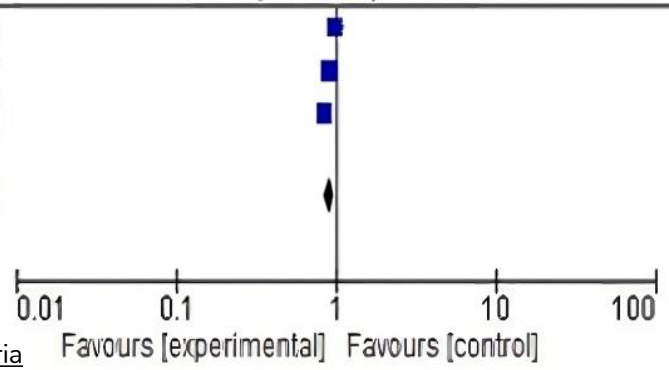

Figure 1: DPP4i v/s placebo on microalbuminuria

Conclusion and Clinical Implications

DPP-4 inhibitors may help reduce early signs of kidney damage, such as microalbuminuria, in individuals with type 2 diabetes. Their influence on more advanced renal and ocular outcomes appears limited, though they show some potential in addressing certain microvascular complications.