

## ABSTRACT

### **THE DIFFERENCES IN EFFICACY OF VILDAGLIPTIN AS A SINGLE DRUG WITH VILDAGLIPTIN AS A COMBINATION WITH METFORMIN IN TYPE II DIABETES MELLITUS: A SYSTEMATIC REVIEW**

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**Background:** In America, the prevalence of diabetes mellitus about 8.6% or 21 million adults in 2016. In Indonesia, the prevalence of diabetes mellitus has increased 2% from 2013-2018 for people aged more than 15 years. Vildagliptin is an oral antihyperglycemic drug class DPP-4 inhibitor which has been approved for use in type 2 diabetes mellitus. However, the benefits and risks of vildagliptin may be different for monotherapy and combination especially with metformin. This systematic review explain the efficacy of vildagliptin as monotherapy and vildagliptin in combination with metformin in type 2 diabetes patients. These findings can be used to develop treatment recommendations for type 2 diabetes mellitus.

**Methods:** Data collection techniques for systematic review using Pubmed and Sciencedirect for terms related to efficacy vildagliptin as single drug and efficacy vildagliptin as combination with metformin in HbA1c, FPG, risk hypoglycemia and weightloss of T2DM. The journals matched with restriction criteria and PICO. The quality of journals is tested using GRADE method.

**Results:** Journal searches found 741 journals, 8 of which were eligible for systematic review with high quality journal by GRADE method. The review of 8 journals found that vildagliptin as combination with metformin has good efficacy and can reduce HbA1c ( $8.1\pm 0.6\%$  to  $6.9\pm 0.1\%$ ), FPG ( $141\pm 15\text{mg/dl}$  to  $106\pm 4\text{mg/dl}$ ), and lower risk of hypoglycemia and weightloss about  $4.67\pm 5.8\text{kg}$  for lowdose combination and  $4.29\pm 6.7\text{kg}$  for highdose combination.

**Conclusion:** Vildagliptin is more effective in combination with metformin in T2DM patients than vildagliptin as single drug.

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**Keywords:** Type-2 diabetes mellitus, Vildagliptin, Metformin, HbA1c, Combination