THE EFFECT OF INSULIN PROVISION ON THE RISK REDUCTION OF TYPE 2 DIABETES MELLITUS: META-ANALYSIS

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ABSTRACT

Background: Insulin is the pivotal hormone regulating cellular energy supply and macronutrient balance, directing anabolic processes of the fed state. Insulin is essential for the intra-cellular transport of glucose into insulin-dependent tissues such as muscle and adipose tissue. The purpose of this study was to examine the effect of insulin provision on the risk reduction of type 2 diabetes mellitus.

Subjects and Method: This was meta-analysis and systematic review. The study was conducted by collecting articles from PubMed, Google Scholar, and Springer Link databases, from 2010-2020. Keywords used “effect insulin” OR “giving insulin” AND “diabetes mellitus” OR “diabetes” AND “cross sectional” AND “adjusted odd ratio”. The inclusion criteria were full text, using English or Indonesia language, and using crosssectional study design. The articles were selected by PRISMA flow chart. The quantitative data were analyzed by RevMan 5.3.

Results: A meta-analysis from 5 studies in Ethiopia, Northeast Ethiopia, Taiwan, African American, and South Korea, reported that insulin provision reduced the risk of diabetes mellitus (aOR= 1.89; 95% CI= 1.82 to 3.57; p= 0.05) with I₂= 84%.

Conclusion: Insulin provision reduced the risk of diabetes mellitus.

Keywords: insulin, type 2 diabetes mellitus

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