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# The Role Of Metformin In The Management Of Pancreatic Ductal Adenocarcinoma: A Qualitative Systematic Review

**Dooyeon LEE***[1], Julian CHOI[2]

[1]*Melbourne Medical School, The University Of Melbourne, AUSTRALIA*
[2]*Department Of Upper Gastrointestinal And Hepatobiliary Surgery, Western Health, AUSTRALIA*

**Background** : Metformin is currently used as an oral hypoglycaemic agent for patients with type 2 diabetes mellitus (T2DM). Recent studies have described its potential benefits in gastrointestinal cancers including pancreatic ductal adenocarcinoma (PDAC). A qualitative systematic review was conducted to examine the current evidence on the role of metformin in the risk, survival outcomes, and treatment of PDAC.

**Methods** : Relevant articles on metformin and PDAC were retrieved from PubMed including observational studies on metformin and the risk and survival outcomes of PDAC, and randomised controlled trials (RCTs) on metformin as a treatment for PDAC.

**Results** : From the 367 articles on the initial search, 26 articles were included in this review. High cumulative doses of metformin were associated with a reduced risk of PDAC, and sulfonylureas and insulin were associated with an increased risk of PDAC. Moreover, metformin was generally associated with improved survival outcomes in patients with PDAC, particularly in high cumulative doses and in patients with resectable PDAC. However, based on the RCTs, the addition of metformin to systemic therapies in advanced and metastatic PDAC was not associated with improved survival outcomes.

**Conclusions** : Metformin may have survival benefits in patients with PDAC but its role in the risk of PDAC is unclear. Moreover, there is no evidence in the RCTs to suggest the use of metformin as a treatment for PDAC. However, given the limited level of evidence, further RCTs are needed to investigate metformin as a potential treatment agent for PDAC.

Corresponding Author : **Dooyeon LEE** (dooyeonl@student.unimelb.edu.au)