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**TYPE : ORAL PRESENTATION**

**CATEGORY : INTERVENTIONAL ONCOLOGY**

**TITLE**

The effect of metformin on hepatocellular carcinoma patients with type II diabetes receiving transarterial chemoembolization: a multicenter retrospective study

**BACKGROUND**

Diabetes is prevalent among patients with hepatocellular carcinoma (HCC) and is associated with a poor prognosis. Metformin is a hypoglycemic drug with anti-tumor effects. The potential positive impact of metformin on HCC patients undergoing transarterial chemoembolization (TACE) is not yet fully understood. This study aimed to investigate the efficacy and safety of metformin on HCC patients with type II diabetes who receiving TACE.

**METHODS**

Between January 2014 and June 2021, a retrospective review was conducted on 385 consecutive HCC patients with type II diabetes across three medical centers. All of them received TACE, and 216 patients received metformin. Propensity Score Matching (PSM) was used to reduce selective bias. Cox proportional hazards regression was employed to compare all-cause death between the metformin and nonmetformin groups, and competing risk regression was used to compare cancer-specific death.

**RESULT**

Before PSM, patients with metformin had significantly longer median overall survival (mOS) (35 months, 95%CI: 26.6-43.4 vs 20 months, 95%CI: 15.4-24.6;  $P<0.001$ ) and median progression-free survival (mPFS) (11 months, 95%CI: 9.8-12.2 vs 8 months, 95%CI: 5.8-10.2;  $P<0.001$ ) compared to those without metformin. Similar results were presented after PSM. Multivariate regression analysis indicated that metformin was associated with a reduced risk of all-cause mortality (HR: 0.54, 95%CI: 0.427-0.684;  $P<0.001$ ) and tumor progression (HR: 0.676, 95%CI: 0.54-0.847;  $P<0.001$ ) before PSM. Excluding deaths influenced by other factors, metformin continued to demonstrate a reduction in cancer-specific mortality risk among patients. Subgroup analysis revealed that, in most groups, patients using metformin had lower all-cause mortality risk and tumor progression risk compared to those without metformin. Adverse events evaluation indicated that metformin could elevate the incidence of nausea during follow-up and after TACE.

**CONCLUSIONS**

Metformin may confer survival benefits to HCC patients with type II diabetes undergoing TACE. Metformin could simultaneously address multiple aspects of treatment for these patients.

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