

中文題目：HIF-1 $\alpha$  的過度表現激活肝功能障礙並影響肝癌患者的生存：一個橫斷面研究

英文題目：Over-expression of HIF-1 $\alpha$  activates liver dysfunction and affects survival of hepatocellular carcinoma patients: a cross-sectional study

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**Background:** Effective HIF-1 $\alpha$  activates downstream transducers regulating angiogenesis, cell survival, and tumor invasion. Correlation with mediators IL-27, TNF- $\alpha$ , and VEGF at diverse clinical-pathologic stages of hepatocellular carcinoma patients remains limited.

**Method:** Plasma mediators were assayed from 141 naïve hepatocellular carcinoma (HCC-total group) and 53 healthy individuals. The HCC-total group included 70 HBV-infected (HCC-HBV), 59 HCV-infected (HCC-HCV), and 12 patients without HBV-/HCV-infection (HCC-NBNC). Another 53 healthy persons (HG) without HBV-/HCV-infection enrolled as control group.

**Results:** HIF-1 $\alpha$ , IL-27, TNF- $\alpha$ , and VEGF expressed significantly not only in HCC-total versus HG (P<0.001, P<0.001, P=0.009, P<0.001 respectively) but also in separate HCC groups: LC-HBV versus HG (P=0.003 in HIF-1 $\alpha$ ; P=0.026 in IL-27; P=0.026 in TNF- $\alpha$ ; P=0.005 in VEGF) and LC-HCV group versus HG (P=0.010 in HIF-1 $\alpha$ ; P=0.002 in IL-27; P=0.030 in TNF- $\alpha$ ; P=0.017 in VEGF).

Over-expressed HIF-1 $\alpha$  linked with poorer liver function (Albumin: r=-0.249, P=0.003; INR: r=0.198, P=0.02; Child-Turcotte-Pugh Classification: r=0.273, P=0.001), clinical condition severity (BCLC system: r=0.214, P=0.011; terminal- versus early-stage HCC, P=0.042; terminal- versus intermediate-stage HCC, P=0.015; terminal- versus advanced-stage HCC, P=0.035), and 6-month mortality (r=0.170, P=0.044).

**Conclusion:** Over-expression of HIF-1 $\alpha$  significantly reflects hepatic deterioration and tumor progression, as well as patient survival.