

ABSTRACT

Background: Liver cancer is the third-leading cause of cancer mortality. Age, race, family, smoking, lifestyle choices, genetic and epigenetic factors are the major risk factors involved. MicroRNAs (miRNA) are short, naturally, occurring non-coding RNAs that suppress translational expression of protein-coding genes. They have been found in diverse tumour types, demonstrating that various sets of miRNAs are typically dysregulated in various malignancies.

Aim: The current study was to investigate the miRNA biomarkers in liver cancer.

Methods: miRNAs were selected using bioinformatics tool. 20 liver cancer samples and 20 healthy control samples were recruited from Shaukat Khanum Cancer Hospital Lahore. RNA was extracted using TRIzol method and cDNA was made. The miRNA expression profiling of selected miRNAs was done by quantitative real-time PCR.

Results: CDKN1A was regulated by hsa-130a-3p. The CDKN1A gene was upregulated in healthy controls and downregulated in liver cancer samples.

Conclusion: miRNA-130a-3p can be investigated further to be used as liver cancer biomarkers.

Keywords: Liver cancer; miRNA; differential expression; CDKN1A, proliferation