

**Thesis Title: “Molecular Epidemiology of Hepatocellular Carcinoma in
India: North-South Gradient”**

Submitted by : **Mohammad Asim**

Supervisor:

Dr. Luqman A. Khan

Professor & Head,

Department of Biosciences,

Jamia Millia Islamia,

New Delhi -110023

Co-supervisor:

Dr. Premashis Kar

Director-Professor,

Department of Medicine,

Maulana Azad Medical College,

BSZ Marg,

New Delhi-110002

ABSTRACT:

Introduction: Hepatocellular carcinoma (HCC) is one of the most commonly occurring solid tumors worldwide and is the most frequent cause of cancer related death in some parts of the world such as sub-Saharan Africa and China. There is considerable evidence suggesting that human hepatocarcinogenesis is a multistage process with the involvement of multiple risk factors. Amongst them HBV, HCV, and alcohol are considered to be the three main causes of HCC.

Objectives: (i) To investigate the mutational profile of Precore/Core and X genes of Hepatitis B virus among patients with HBV related primary liver cancer. (ii) Genotypic characterization of hepatitis C virus related hepatocellular carcinoma cases. (iii) To evaluate the role of Allelic variations of GST gene in the development of HCC. (iv) To study the epidemiological factors associated with the development of Hepatocellular Carcinoma in North and South India. (V) To study the Clinical & biochemical profile and Histological types of Hepatocellular Carcinoma patients and to correlate the final outcome of the study.

Results & conclusion: TT1504, C1914G, T1753V, and A1762T/G1764A mutations of HBV were significantly associated with HCC. It is concluded from the present study that HCV genotype 3 is the predominant type followed by genotype 1. We did not find a definitive role of GSTM1 and GSTT1 metabolic polymorphisms in modulating the possible relationship with alcohol consumption, cigarette smoking and HCC from both the regions. In our study, chronic infection of Hepatitis B virus is a major risk factor for the development of HCC followed by Hepatitis C virus infection. Clinically, most of the HCC cases presented in the study were having very advanced stage liver disease ruling out curative treatment.