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Abstract Topic: - Cancer

Abstract Title: - Exploring the additive effect of miRNA polymorphisms and lifestyle factors on common gastrointestinal tract cancer susceptibility.

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Aims: - microRNAs are known to harbour single nucleotide polymorphisms (SNPs) that lead to loss or gain of its functions and have been found to be associated with altering susceptibility of several cancers. The current study aimed to investigate the role of miRSNPs in common gastrointestinal cancers such as Esophageal, Gastric Colorectal cancers and to look for their effects on the miRNA target proteins.

Methods: - A case control study was designed which included 210 GI cancer cases 230 cancer free controls. Eighteen miRSNPs were successfully genotyped using PCR RFLP and MassARRAY techniques.

Results: - Association analysis revealed that miR-146a; rs2910164, pre-mir-423 and pre-mir-149; rs2292832 polymorphisms significantly altered the risk of colorectal cancers. Multifactor dimensionality reduction analysis demonstrated that miRSNPs alter colorectal cancer risk by interacting with exposures like diabetes mellitus, alcohol consumption, diet and socioeconomic status in the study subjects. Further, expression studies illustrated that heterozygous genotypes of rs2910164 affected the expression of miR-146a target genes IRAK1, TRAF6 and NF- κ B compared to the major genotype in colorectal cancer tissues.

Conclusions: - Thus, the study has been successful in determining the effect of miRSNPs in colorectal cancers from the Indian subcontinent

Keywords: - Association analysis revealed that miR-146a; rs2910164, pre-mir-423 and pre-mir-149; rs2292832 polymorphisms significantly altered the risk of colorectal cancers. Multifactor dimensionality reduction analysis demonstrated that miRSNPs alter colorectal cancer risk by interacting with exposures like diabetes mellitus, alcohol consumption, diet and socioeconomic status in the study subjects. Further, expression studies illustrated that heterozygous genotypes of rs2910164 affected the expression of miR-146a target genes IRAK1, TRAF6 and NF- κ B compared to the major genotype in colorectal cancer tissues.