

# 3<sup>rd</sup> International Conference on Gastroenterology & Urology

July 28-30, 2014 DoubleTree by Hilton Hotel San Francisco Airport, USA

## Interferon gamma (IFN $\gamma$ ) +874A/T polymorphism associated with susceptibility to gastric cancer in South Indian population

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Gastric cancer is the fifth most common cancer worldwide with a high death rate making it the third most common cause of cancer death worldwide. Interferon- $\gamma$  (IFN- $\gamma$ ) is a potent pro-inflammatory cytokine playing a pivotal role in both innate and adaptive immune responses. The A to T change in the +874 (rs2430561) position from the translation start site in the first intron of IFN- $\gamma$  gene increases *in vitro* transcription of IFN- $\gamma$  and may affect disease susceptibility. A case-control study was carried out in 140 gastric cancer (GC) patients and 281 healthy control subjects to evaluate the impact of IFN- $\gamma$ +874 A>T polymorphism on susceptibility to gastric cancer in south Indian population. IFN- $\gamma$  genotyping at position +874 (A $\rightarrow$ T) was carried out by amplification refractory mutation system-polymerase chain reaction (ARMS-PCR) method, followed by agarose gel electrophoresis. The distribution of IFN- $\gamma$  genotypes at +874 (A $\rightarrow$ T) were AA 29.29 %, AT 50% and TT 20.71% in gastric cancer patients and AA 44.13 %, AT 47.69 % and TT 8.18% in control subjects. The frequencies of alleles A and T were 0.54 and 0.46 in GC patients and 0.68 and 0.32 in control subjects respectively. There was statistically significant difference in the distribution of TT genotype [TT vs. AA: OR (95%CI) =3.813 (1.988-7.314); p=0.000066] and T allele [T vs. A: OR (95%CI) =1.787 (1.331-2.399); p=0.0014] between cases and controls. The present study revealed that the risk allele (T) of an associated SNP (rs2430561) located in an NF-kB binding site has elevated IFN- $\gamma$  expression versus the non-risk allele (A) supporting that higher expression of IFN- $\gamma$  is associated with increased gastric cancer susceptibility in south Indian population.

### Biography

Ananthapur Venkateshwari has completed her PhD at the age of 28 years from Department of Genetics, Osmania University, Hyderabad. She is working as Assistant Professor and Head, Department of Cell Biology, Institute of Genetics and Hospital for Genetic Diseases. So far, she has completed four projects and has two ongoing projects funded by various funding agencies. She has published more than 55 research papers in reputed journals and presented research papers in various national and international conferences. She is a Life Member of Indian Society of Human Genetics and Organization of Women Scientists of Developing World.

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