Gastroenterology and Hepatology From Bed to Bench.

Short Cut

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Zamani F et al. ***Prevalence and risk factors of hepatitis C virus infection in Amol City, North of Iran: a population-based study (2008-2011).*** *Hepat Mon 2013 December;13(12):e13313.*

The prevalence of hepatitis C virus (HCV) infection, a major cause of chronic liver disease, remains relatively unreported in several regions of Iran. This population-based survey investigated the prevalence of HCV infection and associated risk factors in 6145 lifelong residents of Amol City, Mazandaran Province, Iran (57 % male, mean age: 43) sampled by clustered random method from May 2008 to March 2011. The prevalence of true HCV infection was 0.05%, notably lower than neighbouring regions of Iran despite the presence of several associated risk factors including a history of surgery (34.7%), unsterile puncture (21.2%), blood transfusion (5.9%) and a family history of hepatitis (5.7%). Resolved HCV infection was identified in 0.03% of participants. History of punctures (p=0.024) and family history of hepatitis (p=0.001) were significantly associated with HCV infection. An explanation for the low observed HCV prevalence is needed and may help to inform public health measures in regions of Iran with greater HCV prevalence.

Mousavi SF, et al. ***Distribution of hepatitis C virus genotypes among patients with hepatitis C virus infection in Hormozgan, Iran.*** *Hepat Mon 2013 December;13(12):e14324*

The hepatitis C viral (HCV) genotype, important to guide management of hepatitis C infection and predict outcome, varies according to the geographical location worldwide and route of viral transmission. This cross-sectional study of 509 patients with HCV infection (mean age 38.87±9.55 y) investigated the distribution of HCV genotypes in Hormozgan, Iran from March 2011 to March 2012. The reported methods of HCV transmission included intravenous drug abuse (56.7%), unknown (29.3%), transfusion related (12.2%), sexual (9.8%) and vertical (2%). HCV genotypes 1a (62.1%), 1b (23%) and 3a (14.9%) were detected which contrasts with the distribution identified in other provinces of Iran and neighbouring countries. There was no significant difference between HCV genotype and gender, level of education, hepatitis C risk factors, occupation and HIV or hepatitis B co-infection. Screening initiatives are needed to achieve early diagnosis and genotyping of HCV infection so management can be patient-specific. Furthermore there is a clear need for primary prevention strategies to reduce HCV transmission.

Mohammadpour AH, et al. ***Pentoxifylline decreases serum level of adhesion molecules in atherosclerosis patients.*** *Iran Biomed J 2014;18(1):23-27.*

Pentoxifylline, an oral phosphodiesterase inhibitor, has demonstrated benefit in severe alcoholic hepatitis mediated by tumour necrosis factor inhibition. The other immunomodulatory effects of pentoxifylline remain relatively unexplored however useful data is emerging from alternative models of inflammation. This double-blind, randomised, pilot study of 40 patients with

angiographically documented coronary artery disease found that two week pentoxifylline treatment reduces serum intercellular adhesion molecule 1 (ICAM-1) and vascular cell adhesion molecule 1 (VCAM-1), responsible for mediating the adhesion of leucocytes and endothelial cells ($p<0.0001$). There was no significant relationship between pentoxifylline and serum monocyte chemoattractant protein 1 or interleukin-18. These anti-inflammatory effects of pentoxifylline may contribute to the therapeutic mechanism observed in severe alcoholic hepatitis. Future studies should evaluatea possible therapeutic role for pentoxifylline in other types of hepatitis, particularly those characterised by upregulated ICAM-1 and VCAM-1 protein expression.

Farifteh F, et al. ***Histone modification of embryonic stem cells produced by somatic cell nuclear transfer and fertilized blastocysts.*** *Cell J 2014;15(4):316-23.*

Stem cell technologyhas the potential to revolutionise therapeutics howeverfurther work is needed toachieve widespread migration from the bench to bedside. Nuclear transfer-embryonic stem cells (NT-ESCs) provide a renewable source of tissue with a low risk of immune rejection althoughthe current process of somatic cell nuclear transfer (SCNT) may incur harmful genomic mutations. This experimental *in vitro* study of mature murine NT-ESCs found that treatment with trichostatin A (TSA), a histone deacetylase inhibitor, significantly improves the developmental rate of embryos and the establishment rate of the NT-ESCs line. These findings may inform future studies in embryonic stem cellsthat use SCNT. The authors postulate that TSA treatment may improve regulation of somatic genome reprogramming by inducing histone hyperacetylation however this studyfound no significant difference in histone H3 acetylation or methylation between TSA treated and non-treated NT-ESCs lines.

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