

RCPE symposium – Gastroenterology

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There is growing concern that recent lifestyle innovations, in particular a high fat/high sugar 'Western diet' and sedentary lifestyle, in part explains the exponential burden of disease related to obesity but also affects the genetic composition and metabolic activity of our resident gut micro-organisms. Using evidence-based practice to decrease our exposure to noxious environmental insult and augment our exposure to beneficial behaviours represents an attractive though challenging aspect of modern medicine.

Session 1 – Diet in inflammatory bowel disease

Inflammatory bowel disease (IBD) is characterised by a dysregulated immune response in genetically susceptible individuals. Genome wide association studies have identified over 200 risk susceptibility loci to date; however, increased IBD incidence cannot be explained by genetic variation alone underlying the strong environmental contribution to disease. David et al. notably demonstrated the ability of diet to rapidly change the composition of the microbiota, with reduced diversity observed after consuming foodstuffs rich in animal fats for only 3 day.¹ There has similarly been exciting data on the effect of two commonly used dietary emulsifiers, carboxymethylcellulose and polysorbate 80, in inducing low grade inflammation and metabolic syndrome in animal models of colitis.² Lastly the role of diet as a treatment in IBD was discussed using a new 6-week structured Crohn's disease diet that used a combination of partial enteral nutrition and exclusion of dietary components to induce remission in 70% of patients presented by Professor Arie Levine from Wolfson Medical Centre, Israel.

Session 2 – IBD: a world view

IBD incidence varies throughout the world with data suggesting this is rising in Asia (1.37 per 100,000 but

greatest in China at 3.44 per 100,000). Environmental risk factors to explain these increasing incidences are yet to be established; however, cigarette smoking and family history would appear to have a less powerful effect on IBD risk in the East compared to the West. There may also be subtle differences in genetic susceptibility with *TNFA15* and *NOD2* risk polymorphisms in particular found more commonly in East and West populations, respectively. Interestingly complicated Crohn's disease may be more common in Asia, with 52% vs 24% of new diagnoses displaying stricturing, penetrating or perianal disease compared to an Australian cohort over the same period.³ The emergence of IBD in Asia therefore no doubt affords a unique opportunity to study aetiological factors in developing nations to provide insight for all.

Session 3 – Diet and the liver

Per year in the UK, £16 billion is spent on obesity and its consequences with 50% of the population predicted to be obese by 2050. Eighty percent of obese patients have evidence of non-alcoholic fatty liver disease that is predicted to become the leading cause for liver transplantation in the developed world. Lifestyle interventions aimed at weight loss through diet and exercise are the primary initial treatment: weight loss of 3–5% is associated with reduction in hepatic steatosis, 5–7% improves hepatic inflammation and > 10% may improve fibrosis. In addition, physical activity improves hepatic steatosis and metabolic indices in the absence of weight loss. A hypocaloric diet of 500–750 kcal/day less than daily energy needs to be combined with 150 minutes of moderate physical activity and consuming > 2 cups coffee a day is therefore considered the most reasonable treatment approach based on current evidence.

In addition to fat, Dr Alastair MacGilchrist (Scottish Liver Transplant Unit) spoke about the role of other environmental toxins and the liver, namely alcohol. The steroids or

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pentoxifylline for alcoholic hepatitis (STOPAH) trial has provided much sought after randomised data to answer this challenging clinical scenario.⁴ Neither steroids nor pentoxifylline improved 12 month mortality compared to placebo; however, there may be a small survival benefit for steroid use at 28 days. Ironically, the day of this symposium was the day the Scottish drinks industry controversially launched its last and final challenge to minimum unit pricing after having its third appeal rejected at the Scottish Court of Session in October.

Session 4 – Diet and irritable bowel syndrome

The diagnosis of functional bowel disorders remains challenging for gastrointestinal physicians but has been aided again by the latest iteration of the Rome (IV) guidelines. Importantly, a diagnosis of irritable bowel syndrome no longer relies on improvement in symptoms with defecation (at least 1 day per week in the last 3 months), rather that pain and defecation are simply temporally associated. Much interest has been given to dietary modification in the treatment of irritable bowel syndrome, in particular the use of diets low in fermentable oligosaccharides, disaccharides, monosaccharides and polyols (FODMAP). These substances are felt to alter osmotic load, fermentation and colonic sensitivity with the gastrointestinal tract. Recent studies have begun to link the reduction in symptoms (50–70% reduction in pain, bloating and improved quality of life) with mechanism (8-fold reduction in urine histamine in treated groups), although further studies are needed.⁵

Our exposure to the world around us is increasingly seen to play a role in common disease pathogenesis. Our ability to understand these stimuli through evidence-based medicine is challenging and attempting to modify patients risk taking behaviour even more so.

References

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