



12TH EURO-GLOBAL GASTROENTEROLOGY CONFERENCE

September 11-12, 2017 | Paris, France

Keynote Forum

Day 1

Gastro Congress 2017

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Hassan Ashktorab

Howard Univeristy Cancer Center, USA

How can clinician be precise in era of precision medicine? Case of colon cancer

Colorectal cancer is the second cause of death in the world and genomic alteration plays an important role in this disease. Much of the underlying genetic ‘cancer driver’ mutations/varaints in sporadic colorectal cancer (CRC) have not been characterized by race. Here, we report the identification of distinct novel variants from CRC patients in mismatch repair (MMR) genes MSH2, MSH3 and MSH6, and APC. We developed a panel of 20 frequently altered colon cancer genes for targeted sequencing in 138 colon tissues using next generation sequencing to examine 98.8% of the targeted exons and splice junctions at a depth of sequencing that allowed for high confidence variant calling. After alignment and variant calling, we annotated the variants with information from the 1000 Genomes Project, Catalogue of Somatic Mutations in Cancer (COSMIC), Polymorphism Phenotyping v2 (Polyphen2) and PFAM domain and transcription factor motifs. Excluding synonymous SNVs, 212 deleterious variants in adenoma, 760 in advanced adenoma, and 2624 variants in tumours were detected. Novel variants (1591 and 1363) were found in MMR genes (MSH6 and MSH3) and APC gene, respectively. These findings further highlight the relevance of APC gene in CRC onset but also the potential underestimation of the MSI-H in sporadic CRC as many of the novel mutations so called “uncertain significance” in MMR genes detected here were of a deleterious nature with a therapeutic interest.

Biography

Ashktorab has completed his PhD from Utah University and Postdoctoral studies from Indiana University and University of Florida, School of Medicine. He is the director of Microarray lab, a member of Gastrointestinal Research group. He has published more than 100 papers in reputed journals and has been serving as an editorial board member of many Journal including DDS, GUT, PlosOne and others.

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Terence K Smith

University of Nevada, USA

The importance of neuronal serotonin in colonic motor patterns

5-hydroxytryptamine (5-HT, serotonin) has two sources in the gut, descending myenteric 5-HT interneurons (~5% of all 5-HT) and enterochromaffin (EC) cells (~95% of 5-HT). 5-HT is synthesized by the rate limiting enzyme tryptophan hydroxylase (TPH); TPH1 in EC cells and TPH2 in EC cells. In the colon, these two pools of 5-HT appear to be connected by intrinsic primary afferent neurons (IPANs) that have sensory endings in the mucosa and synapse with 5-HT interneurons. The prominent inhibitory effects of 5-HT_{1A/2B/3/4} and 7 receptor antagonists on colonic motility suggests that many of these receptors are on various cell types including glia that are largely activated by 5-HT interneurons. Major motility patterns in the colon involving 5-HT include tonic inhibition of the muscle layers interrupted by rhythmic peristaltic waves called colonic migrating motor complexes (CMMCs), and secretomotor activity and possibly blood flow. In large mammals (e.g. dog, pig and human colon) 5-HT neurons occur in both the myenteric plexus and the extensive Henle's plexus, that synapse with secretomotor neurons in Meissner's plexus. Henle's plexus also provides a motor innervation to submucosal pacemaker cells that generate slow waves. Some 5-HT neurons also project to prevertebral ganglia suggesting they are viscerofugal neurons that they can activate postganglionic sympathetic neurons, whose terminals surround 5-HT neurons. We propose that asynchronous firing in 5-HT neurons excite inhibitory motor neurons (IMNs) to generate tonic inhibition and suppress pacemaker activity. In contrast, 5-HT released from EC cells activates IPANs that synchronizes 5-HT neurons. Synchronized firing of 5-HT neurons likely activates glial cells, which release PGE₂, that switch off IMNs and remove tonic inhibition. Synchronized 5-HT neurons also likely generate a slow excitatory postsynaptic potential (sEPSP) in IPANs by activating 5-HT₇ receptors that generate CMMCs that in turn excite excitatory motor neurons and pacemaker cells.

Biography

Terence Smith is Professor in the department of Physiology and Cell Physiology at the University of Nevada-Reno, USA, where he is the Director of the Dynamic Imaging Core. He received his PhD in Neuropharmacology/Electrophysiology from Monash University, Victoria, Australia under Professors Mollie Holman and David Hirst who first classified enteric neurons electrically. His interests have focused on how the enteric nervous system regulates gut pacemakers, and more recently optogenetics to study gut motility.

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Steven Teich

Carolinas HealthCare/Levine Children's Hospital, USA

Shocking the GI tract: Electrical stimulation from top to bottom

Electrical stimulation of the gastrointestinal tract has been touted as a possible therapy for intestinal motor dysfunction since 1963 when Bilgutay, et al., reported the use of transluminal electrical stimulation to induce peristalsis. In the late 1960's and 1970's the myoelectrical activity of the gastrointestinal tract was elucidated along with its relationship to gut contractility. Out of this initial research several clinical applications of gastrointestinal electrical stimulation have arisen. These include gastric electrical stimulation (GES) for treatment of gastroparesis, sacral nerve stimulation (SNS) for treatment of fecal incontinence and constipation, and electrical stimulation of the lower esophageal sphincter (LES) for treatment of severe gastroesophageal reflux disease (GERD). GES is a low energy, high frequency system that stimulates the nerves that innervate the gastric antral muscle. GES improves nausea and vomiting, decreases medical costs, decreases hospital days, and improves quality of life in patients with gastroparesis refractory to dietary and pharmacological interventions. SNS is a low energy, high frequency system that directly stimulates the third sacral nerve root. SNS significantly improves severe fecal incontinence and constipation compared with optimal medical therapy. Electrical stimulation of the LES for treatment of GERD is the newest electrical stimulation therapy. Studies published in the last 2 years demonstrate sustained improvement in GERD outcome and GERD-HRQL, elimination of the need for daily GERD medications, and sustained normalization of esophageal acid exposure compared to standard medical therapy for severe GERD. Electrical stimulation of the gastrointestinal tract continues to have great potential for many GI disorders.

Biography

Steven Teich graduated from The State University of New York at Buffalo College of Medicine. He completed a General Surgery Residency at George Washington University Hospital and a Pediatric Surgery Fellowship at the University of Pittsburgh. He is board certified in General Surgery, Pediatric Surgery, and Surgical Critical Care. He was Director of the Surgical Neuromodulation Program at Nationwide Children's Hospital, Columbus, OH. He has published 57 peer-reviewed papers and 16 book chapters and edited a book entitled Reoperative Pediatric Surgery. He serves on the editorial board of two journals and is an ad hoc reviewer for many journals.

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Steven Gundry

Loma Linda University School of Medicine, USA

Hippocrates was Right! All disease begins in the gut: New insights at the forefront of Gastroenterology

The human gut surface area measures about the same as a regulation tennis court. Not only does it constitute the area responsible for the breakdown and digestion of proteins, fats, and carbohydrates, but also until recently, its function as the major reservoir for the microbiome has been little appreciated. The interaction of the microbiome within the oral cavity, the stomach, small bowel, and the colon now informs us that rather than being a digestive processing center, the gut in reality is the “Sixth Sense,” receiving and interpreting information from bacteria, viruses, plant polyphenols, helminthes, and fungi. Moreover, the neurons and immune cells lining and literally protruding into the lumen of the gut, process and interpret the bacterial and viral signals, are educated by them and in turn, modulate and control not only the gut metabolism, but have direct and indirect effects on emotional states, brain mitochondrial function, and neuron survival. Indeed the gut is the portal and controller of neurodegenerative diseases such as Alzheimer’s, Parkinson’s and ALS. The modern gastroenterologist is now at the forefront of managing these conditions as never before. How the Gastroenterologist accomplishes these feats will be discussed.

Biography

Steven Gundry worked in medicine for over 40 years. He is probably best known for his work as a cardiologist and heart surgeon... but today his focus is on something very different, teaching people how to avoid surgery by using my unique vision of human nutrition. His mission is to improve your health, happiness, and longevity by making simple changes to your diet. He is currently the Director and Founder of the International Heart & Lung Institute as well as the Center for Restorative Medicine in Palm Springs and Santa Barbara, CA. Every day at these offices, He help patients learn how to take control of their weight, health, and energy by using my surprisingly simple diet advice. He eventually changed his interest from Cardiology to digestive system and diet that make living easy by improving digestion and nutrition. He laid a path for weight reduction by improving the digestion and nutrition.

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Vikas Leelavati Balasaheb Jadhav

Dr. D Y Patil University, Maharashtra, India

Trans-abdominal sonography of the stomach and duodenum

Trans-abdominal sonography of the stomach and duodenum can reveal following diseases: gastritis and duodenitis, acid gastritis. An ulcer, whether it is superficial, deep with risk of impending perforation, perforated, sealed perforation, chronic ulcer and post-healing fibrosis and stricture, polyps and diverticulum, benign intra-mural tumours, intra-mural haematoma, duodenal outlet obstruction due to annular pancreas, gastro-duodenal ascariasis, pancreatic or biliary stents, foreign body, necrotizing gastro-duodenitis, tuberculosis, lesions of ampulla of vater like prolapsed, benign and infiltrating mass lesions. Neoplastic lesion is usually a segment involvement, and shows irregularly thickened, hypoechoic and aperistaltic wall with loss of normal layering pattern. It is usually a solitary stricture and has eccentric irregular luminal narrowing. It shows loss of normal gut signature, enlargement of the involved segment seen, shouldering effect at the ends of stricture is most common feature. Enlarged lymph-nodes around may be seen. Primary arising from wall itself and secondary are invasion from peri-ampullary malignancy or distant metastasis. All these cases are compared and proved with gold standards like surgery and endoscopy. Some extra efforts taken during all routine or emergent ultrasonography examinations can be an effective non-invasive method to diagnose primarily hitherto unsuspected benign and malignant gastro-intestinal tract lesions, so should be the investigation of choice.

Biography

Vikas Leelavati Balasaheb Jadhav has completed Post-graduation in Radiology in 1994. He has 19 years of experience in the field of gastro-intestinal tract ultrasound and diagnostic as well as therapeutic interventional sonography. He has four Indian Patents and an International Patent published on his name in the field of gastro-intestinal tract sonography and the radiology, since 2008. He has delivered many lectures in Indian as well as International Conferences in nearly 20 countries as an invited guest faculty, since 2000. He is a Consultant Radiologist and Specialist in Unconventional Gastro-Intestinal Tract Ultrasound and Diagnostic as well Therapeutic Interventional Sonologist in Pune, India.

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