News

Dream big and keep moving—the Liver, Microbiome and Academic Skills Workshop cosponsored by *Hepatobiliary Surgery and Nutrition* and AME Publishing Company

Lucia Huang, Wymen Chen

Editorial Office, Hepatobiliary Surgery and Nutrition, Guangzhou 510120, China

Correspondence to: Lucia Huang and Wymen Chen. Intern, Editorial Office, Hepatobiliary Surgery and Nutrition, Guangzhou 510120, China. Email: editor@thehbsn.org.

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Beijing is cool with a pleasant weather in September. It's a lovely autumn day when the Liver, Microbiome and Academic Skills Workshop was successfully inaugurated. The workshop was held from September 8–9, jointly sponsored by Peking Union Medical College Hospital, AME Publishing Company, *Hepatobiliary Surgery and Nutrition* (*HBSN*), University of Chicago Global Surgery, University of Chicago Department of Surgery and University of Chicago Center in Beijing. This series meeting has been successfully held for the sixth time. The workshop was divided into four sessions, focusing on microbiome, liver diseases and academic writing skills. Dozens of experts from home and abroad attended the brilliant workshop and shared their unique experience (*Figure 1*).

Figure 1 A picture of most invited speakers.

The microbiome—current state and implications for disease

At the opening ceremony, as one of the chairmen of the workshop, Prof. Yilei Mao, deputy chair in Chinese Society of Liver Surgeons and processor of PUMC, extended his warm welcome and greetings to all speakers and audiences. Then the first session began.

The first speaker is Dr. Bengt Jeppsson who is a professor of surgery at Lund University, Sweden. He made a keynote speech on microbiota and surgical disease, introducing their relationship and the pros and cons of probiotic administration for ICU patients. He also indicated that administration of probiotic induces microbial diversity. Prof. Jeppsson's speech aroused heated discussion. Participants put forward questions about the experiment and hospital cases (*Figure 2*).

Then, on behalf of Dr. Nan Qin from Shanghai Realbio Technology Co., Ltd., his colleague Dr. Ping Wu made a speech on the latest research progress in human microbiome and introduced translational researches on human microbiome as well as their industrialized applications.

Mr. Bowen Zhao, CEO of Quantihealth, China, focused his speech on navigating gut microbiome and metagenome sequencing for clinical research. He came up with several ideas. For example gut microbiome could have a direct or indirect influence on human health and drug efficacy. And fecal microbiota transplantation is helpful to treat some chronic diseases. He also described the process of metagenome sequencing.

Dr. Dandan Hu, a resident of Sun Yat-sen University Cancer Center, paid attention to the relationship between gut microbiome and time restricted feeding (TRF). After

Figure 2 Prof. Yilei Mao (A) and Prof. Bengt Jeppsson (B).

Figure 3 Mr. Bowen Zhao (A), Dr. Dandan Hu (B) and Dr. Wu Ping (C).

the presentation, experts agreed that there are still a lot to study about the TRF and it needs joint efforts (*Figure 3*).

Microbiome and liver disease

Hosted by Prof. J. Michael Millis, professor of surgery in University of Chicago Medicine, the second session highlighted the relationship between microbiome and liver diseases. First of all, Prof. Jamila Faivre, associate professor of Cell Biology in Paul Brousse Hospital, indicated that dysbiosis exists at early stages of liver chronic diseases. Bacterial components (LPS, DCA) from gut microbiota contribute to HCC development in mice. But whether human dysbiotic microbiota emits HCC-promoting bacteria or bacterial products remains to be demonstrated. She concluded that more metagenomics and metabolomics studies of microbiota from patients with chronic liver diseases and HCC are needed.

Then Prof. Simon C. Robson from Harvard Medical School and Beth Israel Deaconess Medical Center shared his opinions on purinergic signaling and the microbiome in gastrointestinal and liver disease. He presented that: (I) nucleotides/nucleosides derived from host or bacteria appear to have major effects on inflammatory reactions and immune responses in experimental models tested; (II) CD39 gene polymorphisms are noted in immune mediated disease of gut and liver; (III) differential expression of CD39 by immune cells, as impacted by bacteria, modulates inflammatory and immune reactions *in vivo* (*Figure 4*).

Dr. Sara Gaines, a research resident of General Surgery in University of Chicago, gave a speech entitled "*Bacteria as the Primary Causative Agents of Anastomotic Leak—Mechanisms, Implications, and Prevention Strategies*". She put forward that phosphate based therapy can suppress bacterial virulence without affecting bacterial growth and we do not need to kill bacteria to render them completely harmless.

The next speaker is Prof. Peng Chen, a professor from Southern Medical University. He made three conclusions about his speech: (I) the progression of liver disease, especially chronic liver disease was dependent on gut microbiota; (II) leaky gut is believed to be the key promoter for liver injury development; (III) inflammation was the main mediator for the regulation of gut permeability by the dysbiosis.

On behalf of Dr. Hani El-Nezami who is a professor from Institute of Public Health Clinical Nutrition in University of Eastern Finland, Dr. Murphy Lam Yim Wan, a postdoctoral researcher from University of Hong Kong, came up with that: (I) probiotic reduce the tumor growth

Figure 4 Prof. Jamila Faivre (A) and Prof. Simon C. Robson (B).

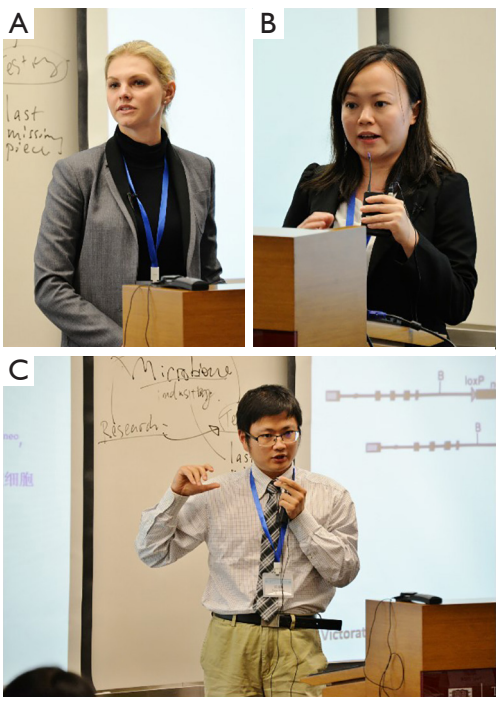

Figure 5 Dr. Sara Gaines (A), Dr. Murphy Lam Yim Wan (B) and Prof. Peng Chen (C).

and inhibit angiogenesis in mouse; (II) the anti-angiogenesis in tumor is related to reduced Th17 and angiogenesis factors; (III) gut microbiota were reshaped by probiotic intake; (IV) the polarization of the gut microbial community in both taxonomy and functional aspects are towards SCFA producing and hence, reduce Th17 differentiation (*Figure 5*).

Difficult malignant liver disease

On the second day, the workshop started with a keynote speech by Prof. Timothy Pawlik from Wexner Medical Center at The Ohio State University. He introduced the development of Practice Guidelines on ICCA in several aspects, including epidemiology and risk factors, molecular pathogenesis, clinical diagnosis of ICCA, staging systems for ICCA and treatment. He also proposed some possible directions to future studies. First, randomized controlled trials selecting patients with ICCA are urgently needed. Second, randomized controlled trials in which patients with ICCA have sufficient statistical power to determine the standard of care are needed. Third, further studies should focus on standardized selection criteria and comparator arms evaluating systemic therapy in homogenous groups of patients with ICCA. Fourth, the use of novel molecular strategies to define homogenous cohorts within the ICCA population is needed.

Subsequently, Prof. Feng Shen from Eastern Hepatobiliary Surgery Hospital delivered a speech on microvascular invasion (MVI) in hepatocellular carcinoma surgery. He described the definition, classification, incidence, and mechanism of MVI, and also the prognostic impact and potential surgical significance of MVI. He pointed out that although lots of experiments have been conducted, the mechanism of MVI in hepatocellular carcinoma is still unknown. Besides, he believed that preoperative confirmation or prediction of MVI may be more useful in HCC surgical practice, especially for early HCC (*Figure 6*).

Following Prof. Shen's speech was the speech given by Prof. J. Michael Millis on the role Trans Arterial Radio Embolization (TARE) in the management of HCC. Prof. Millis showed some studies and the results suggested that TARE may increase survival in patients with tumor PVT, if we boost the dose and TARE may be able to cure certain lesions, but cure for most patients is still elusive.

Prof. Pengyu Huang from ShanghaiTech University shared his experience about application of CRISPR/Cas9 systems in studying and treating liver diseases. In his speech, Prof. Huang sorted out some researches in mice and

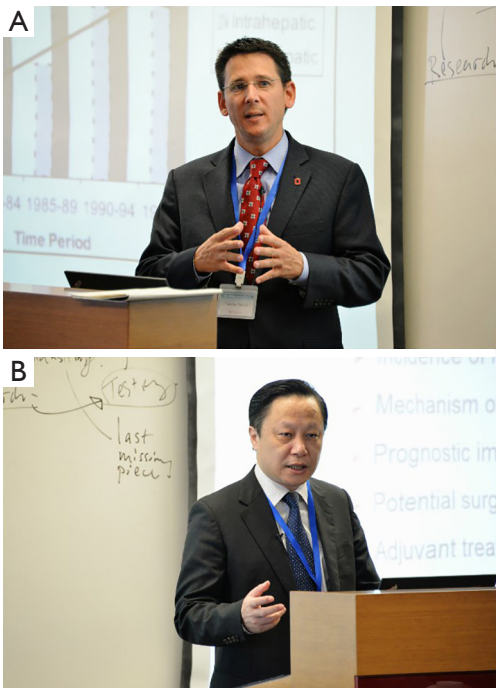

Figure 6 Prof. Timothy Pawlik (A) and Prof. Feng Shen (B).

Figure 7 Prof. J. Michael Millis (A) and Prof. Pengyu Huang (B).

demonstrated that microhomology-mediated end joining (MMEJ)-based targeted integration is more efficient than the widely used homology-directed repair based targeted genome editing and could be used for precise targeted integration compared to non-homologous end joining (NHEJ)-based targeted integration (*Figure* 7).

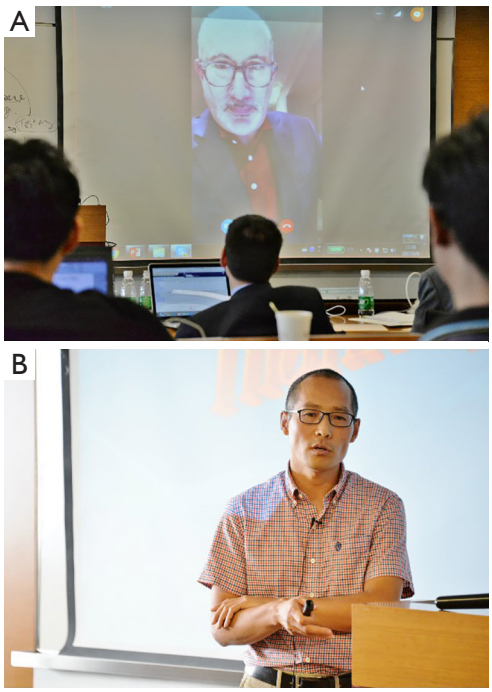

Figure 8 Prof. Jeffrey B. Matthews (A) and Mr. Yongfeng Huo (B).

Academic skills—making an impact—sharing your ideas

The last session of the workshop mainly focused on ethics in scientific publications and academic writing skills. Prof. Jeffrey B. Matthews, from University of Chicago, gave a detailed introduction of peer review process to all participants via Skype.

On behalf of Mr. Xinshi Chen, the editorial director of *National Medical Journal of China*, Mr. Yongfeng Huo delivered a speech entitled "*Scientific Research and Academic Writing-Lessons from the Withdrawal of 107 Articles*". Audiences were interested in his speech and actively discussed about ethics in scientific publications, especially about the withdrawal of 107 articles from *Tumor Biology* this year. Some people argued that authors involved were victims of the problematic promotion system in China. Some believed that it's mainly due to the mild supervision of relevant organizations. Others commented that it's a comprehensive issue from many aspects (*Figure 8*).

Figure 9 Discussion among experts and audiences.

Afterwards, Prof. J. Michael Millis and Prof. Timothy Pawlik shared their ideas about ethics in scientific publications and where good research ideas come from respectively. Prof. Pawlik proposed a "6P" which are important during academic writing. They are: pretty good idea, plan, partners (collaborators, biostatistics help), personal involvement (you and your mentor), punctuality (have a timeline), and perseverance/persistence. Following speech was from Prof. Simon C. Robson, who described lots of skills in academic writing, covering every part of an academic article.

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The final speaker for the workshop was Dr. Sara Gaines from the University of Chicago. She made a speech about the pathway to becoming a surgeon scientist. She gave some suggestions to young people who want to become surgeon scientists. She believed that learning from mistakes and failure was very significant.

Dream high and keep moving

A young doctor shared his thoughts with us after the workshop. He said, "*As an ordinary doctor, I would like to look for a right direction to scientific research and then devote myself entirely to it. Although it may take me a decade or even two to achieve something, it is meaningful.*" Dream big, keep moving and one day, you will reach your goal (*Figure 9*).

We gave our heartfelt thanks to all the speakers and organizers for their great support and contribution to this workshop. As a series meeting, this workshop will continue to be held in 2018. We warmly welcome your participation. You may contact us via email of *HBSN* journal. Look forward to our next gathering!

Acknowledgements

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.