

Visceral Medicine: The View of GI

Peter Huebener Tania Amin Ansgar W. Lohse

Department of Medicine, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

Gastroenterologists and visceral surgeons live in wonderful times: they practice medicine in one of the largest, most exciting, and most innovative disciplines in all of medicine; they benefit from enormous technological and scientific advances; they can work in excellent interdisciplinary teams; and they care for such a wide range of diseases – it never gets boring!

This year's conference will show the excitement and the vitality of our community and of our topics. This year's motto in many ways summarizes the wealth of our medical practice: "Mit Verstand und Bauchgefühl", best translated as "with reasoning and gut feeling" – the English version in some ways is even more specific gastroenterological: "gut feeling." In order to provide excellent medical care, it is not sufficient to have an exquisite understanding of the biological basis of human disease, to comprehend the complex pathophysiology of disease processes, to know of the various drug treatments and interventional therapies – both in diagnosis and in patient management, it is just as important to assess the emotional aspects of being a patient, to have a feeling for the patient's overall situation and his or her specific symptoms, to grasp the effect the disease may have on the patient's life, and to guide the patient with empathy and realistic optimism through the disease journey. At the same time, we physicians can rightfully "feel" to be located at the forefront of medical and scientific progress, with novel insights into disease mechanisms and therapeutic innovations changing our clinical practice year after year. It is this combination of skill and rationality on the one hand, and sensitivity and care on the other hand that is the basis of good medical care as well as meaningful scientific progress – particularly in our wide and varied field of gastroenterological diseases, which makes medical practice in visceral medicine so exciting and fulfilling.

Young Scientists and Strong Research Lead the Way

The past years have seen enormous progress in so many very different aspects of gastroenterology, and a lot of that progress has seen very important contributions from German scientists. This is not only to the benefit of our patients; it is also to the benefit to our discipline gastroenterology and visceral surgery. A medical discipline that is not showing decisive progress will soon fall behind, become less attractive for young medical graduates making their career choices, but also become less influential in the development of the health care system and thus cannot outlive its potential. Gastroenterology is attractive, innovative, lively. There are many ways to measure the scientific activity of research areas – a simple one in the German research system is the number of applications for DFG (German Research Foundation) funding. In all of medicine, gastroenterology has during the past 5 years been the research area with the highest number of DFG applications, and an appropriately high rate of DFG funding. The DFG has an excellent bottom-up system, where strategic decisions that distribute budgets are not made on the basis of political or strategic guidelines, but are solely based on the quality of the submitted projects, and thus shaped by the scientific community itself: the budget is simply distributed according to the number of applications, thus keeping the funding quota more or less the same across all subject areas, from engineering to archeology, from microbiology to surgery, from psychiatry to gastroenterology. Thus, there has been a steady increase in gastroenterological research funding, reflecting not only the high activity but also the high quality of German GI research. Much of this will be presented at the conference, and much of this will be presented by young scientists, by the colleagues spearheading all this exciting work.

Special Focus on Inflammatory Bowel Diseases

There are so many fields of basic and clinical research to be excited about. The perhaps largest and presently most exciting research field is inflammatory bowel diseases, where there is a particular focus on the interactions between the microbiome and the immune system. Clearly, the large mucosal surface and the enormous multitude of microorganisms within the gut present a formidable challenge for immune homeostasis, and the better we understand the many facets of the intestinal microbiome, including the mycobiome and the virome, the more intrigued we are that for most human beings there is a peaceful and even constructive co-existence between the microbiome and the host. Two international top scientists from this research field are presenting their work at the meeting: Eran Elinav from the Weizmann Institute für Science in Israel, who will receive this year's Ismar Boas Medal, will present some of his absolutely world-leading work on the intestinal microbiome, the potential for targeted therapeutic interventions, and the detrimental effect of certain nutrients such as artificial sweeteners. It is probably his concept of individualized intervention, dietary or by drugs or phage therapy, on the basis of an individual analysis of both the individual microbiome and the dietary habits, which will shape therapy in the future.

Severine Vermeire, head of gastroenterology at Leuven University, who is playing a leading role in clinical trials in inflammatory bowel disease research, will give an overview of the exciting armamentarium of immune interventions presently available to the gastroenterologists, which have enormously improved patient care for these common and so bothersome diseases during the past 20 years. These key lectures are complemented by many further talks on various aspects of intestinal inflammation, and exciting new research understanding the underlying pathophysiology.

Immunotherapy and Other Oncological Progress

Recent years have also seen rapid progress in various aspects of GI oncology. In particular, hepatocellular carcinoma (HCC), for many years a disease so frustrating for the medical GI oncologist, is seeing a variety of medical treatment options and, in parallel, steady progress in understanding the pathobiology of the disease. In view of the increasing incidence and prevalence of HCC, primarily due to the pandemic of fatty liver disease and steatohepatitis, this progress is dearly needed and will constitute a major part of our GI oncological workload in the coming decades. It is encouraging to see so much good research going on in this area.

Immuno-oncology is also changing the landscape of all other GI cancers, in the most extreme cases even obvi-

ating the need of resective surgery. However, these exciting new opportunities come at a price: stimulating the immune system can induce immune-mediated diseases, some of them transient and mild, but some also debilitating and chronic-progressive. Just as we have learned in the past to balance the benefits and risks of immunosuppressive therapy, we now need to learn to balance the risks of immunostimulatory treatment options, and to make thoughtful individualized decisions taking into account both the tumor risks and the immune risks – and patient preferences. This requires a well-informed patient, and this indeed becomes more and more our role: to empower the patient to make an informed decision for his or her individual treatment.

The Future of Visceral Medicine

The increasing complexity of visceral medicine, the improved understanding of the heterogeneity of gastrointestinal diseases, and the multitude of treatment options are thrilling opportunities for everybody involved in patient care and in research – but this complexity is also the key challenge for the future. Gastroenterologists are very much both generalists and specialists, which can be very satisfying in our daily work. However, it also means an enormous responsibility to make sure that our patients receive the best diagnostic work-up and the most appropriate individual therapy. Increasingly, this requires the development of expert centers and cooperative networks involving general practitioners, general gastroenterologists, hospital units, and specialist centers. Other countries are well ahead of us in regulating care in a way that takes into account these challenges. It is with this in mind that politicians are trying to reshape the hospital landscape on the basis of the recommendations of the Leopoldina and the hospital commission. Politically unpopular decisions need to be taken to move the field forward in order to achieve better medical care.

In France, in Poland, or the UK, many rare and complex diseases MUST be cared for in certified expert centers, and the outcomes of patients there are superior from what we see in Germany. The European Commission 6 years ago initiated the European Reference Networks for rare and complex diseases in order to provide expert care across all of Europe, and the services of this network will increasingly become available to every patient with such a rare disease. This needs to be developed further, and indeed, just like for many surgical procedures now, reimbursement should only be given to providers with the necessary level of expertise. This may be a painful process for many of us, but it is a necessary process in the interest of our patients. Our scientific society should support this development, which any public health expert will say is overdue. The same applies to opening hospital treatment for more outpatient procedures,

and turning inpatient procedures increasingly into outpatient procedures with an appropriate reimbursement, taking away at the same time monetary incentives for unnecessary inpatient procedures. Quality control, measuring outcomes including patient satisfaction, should guide us in this process. The best care for our patients should be the unifying aim for all of visceral medicine.

The best care also includes better prevention. Many serious gastroenterological diseases could be effectively prevented by better nutrition, by more exercise, by less alcohol consumption, by screening colonoscopy, to name just a few. While screening colonoscopy is overall a real success story in Germany, the other aspects of prevention are much ignored. A recent paper in the *Lancet* impressively showed how in Scotland the introduction of an increased minimum charge on alcoholic beverages quickly and markedly reduced alcoholic liver disease hospital admissions and mortality within a short time period. As a community, we should push our politicians and society as a whole to acknowledge the enormous potential of prevention. And as investigators, we should study in more detail the effectiveness of different measures, and their pathophysiology. The microbiome may here again become a particular focus – we still need to learn a lot more before we can recommend specific preventive microbiome interventions, but we already know enough to recommend a more

varied, primarily vegetable-based diet with a reduced calorie intake and more physical exercise. As good gastroenterologists, especially as a scientific community, we span the whole spectrum from prevention, to diagnosis, individualized effective therapies, and for many patients also at the end good palliative care. Our congress will discuss this enormously wide spectrum of topics, and hopefully display the fascinating spectrum of options we have available, and the chances opening up for the future.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Funding Sources

No funding sources for this study.

Author Contributions

Peter Huebener – writing and critical revision of the manuscript. Tania Amin – critical revision of the manuscript. Ansgar W. Lohse – initial draft, writing, and critical revision of the manuscript.