

Acute and Chronic Infections of the Gastrointestinal Tract

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All things change, nothing is extinguished.

(Ovid, around 8 A.D.)

The times they are a-changin'. (Bob Dylan, 1963)

Whereas the victory of mankind over infectious diseases was prematurely celebrated in the 1960s [1], nature has struck back with its ability to adapt and to respond, thus requiring new strategies to prevent and treat infections today. Especially in the interdisciplinary field of gastrointestinal medicine and surgery, intra-abdominal and luminal infections challenge clinicians in their everyday decisions and practice. In their report on the threat of antibiotic resistance in 2013, the Centers for Disease Control and Prevention (CDC) have classified pathogens as 'urgent' and 'serious threats' based on their clinical and economic impact, current and estimated incidence, transmissibility, availability of effective antibiotics, and available barriers for prevention, which are well known to gastroenterologists and visceral surgeons: *Clostridium difficile*, carbapenem-resistant enterobacteriaceae, extended beta-lactamase-producing enterobacteriaceae, and drug-resistant *Salmonella*, *Shigella*, *Campylobacter*, *Pseudomonas*, and *Candida* species [2]. In addition to the challenge of antimicrobial resistance, advances in medicine have also lead to an increasing number of immunosuppressed patients presenting with atypical or opportunistic infections by emerging and re-emerging pathogens. In order to successfully treat abdominal infections, physicians do not only need to carefully diagnose the source of infection and assess the severity of the disease but also to assess individual host as well as environmental factors to decide on empiric first-line therapy in a multidimensional approach [3].

This issue of VISZERALMEDIZIN covers different aspects of contemporary diagnosis, prevention, and treatment of bacterial infections in the ever-evolving field of gastroenterology

and abdominal surgery. In addition to a close interdisciplinary collaboration to control the infectious focus, the selection of the appropriate empiric antibiotic therapy remains of particular importance for the treatment of hepatobiliary infections and abdominal sepsis. Herein, Hagel and Scheuerlein [4] provide an armamentarium of strategies to optimize empiric antibiotic therapies for intra-abdominal infections and peritonitis with the aim to decrease mortality and to reduce unnecessary antibiotic use. In addition, a specific risk- and severity-based approach to the treatment of biliary infections is given by Bornscheuer and Schmiedel [5] in their review in which they provide expert recommendations for suitable antibiotic regimes based on the updated Tokyo guidelines from 2013. Pyogenic liver abscess is a dreaded complication of uncontrolled cholangitis and portal pyemia which requires prompt broad-spectrum antibiotic therapy, diagnostic aspiration, and therapeutic drainage. In addition to presenting rationale-based antimicrobial therapy regimens for clinical practice, Lübbert et al. [6] also introduce the reader to the emerging syndrome of invasive liver abscess caused by *Klebsiella pneumoniae*. Facing the detrimental outcome of bacterial infection superimposed on intra-abdominal pathology, one is easily tempted to initiate antibiotic prophylaxis for patients at high risk for infection owing to bacterial translocation. Arlt et al. [7] exemplify the pros and cons of antibiotic prophylaxis as well as the gap between available evidence and clinical praxis in their review on the controversial topic of antibiotic prophylaxis for necrotizing pancreatitis.

In order to further stress the hazards of uncontrolled antibiotic use, the systematic review from Keller and Weber [8] in this issue of the journal focuses on new diagnostic strategies and novel treatment options for *C. difficile*-associated enterocolitis. However, the spectrum of infectious complications

that need to be competently managed by gastroenterologists and colorectal surgeons is not restricted by the diaphragm, as underlined by Kucharzik and Maaser [9] in their article on infectious complications in inflammatory bowel disease. Among the presentation of common intestinal infections, which mimic or trigger flares, they also discuss strategies how to diagnose and treat pulmonary infections in those patients receiving immunosuppressive therapy.

As nature easily adapts to overly rigid approaches of mankind to treat diseases, physicians and surgeons need to employ a structured, risk-based approach with strategies of antibiotic diversity in order to overcome the threat of infectious disease. This issue of the journal attempts to summarize current state-of-the-art recommendations in order to achieve this noble aim in gastrointestinal medicine and surgery.

References

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