**V 12**  
**N-chlorotaurine demonstrates potent microbicidal activity against multiresistant bacteria**

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**Background:** N-chlorotaurine is an endogenous antiseptic that can be applied topically as a well-tolerated anti-infective at many body sites including the bronchopulmonary system via inhalation because of its mild activity and good tolerability. Considering its application in chronic diseases such as chronic bronchitis and cystic fibrosis, we desired to prove its activity against antibiotic-multiresistant bacteria.

**Methods:** The microbicidal activity of N-chlorotaurine against relevant antibiotic-multiresistant bacteria was tested in quantitative killing assays against a panel of clinical isolates.

**Results:** N-chlorotaurine (1%, 55 mM) reduced the number of CFU of strains of methicillin-resistant *Staphylococcus aureus*, linezolid-resistant *S. epidermidis*, vancomycin-resistant, and linezolid- and vancomycin-resistant *Enterococcus faecium*, 3MRGN and 4MRGN *Escherichia coli*, *Pseudomonas aeruginosa*, *Acinetobacter baumannii*, and *Klebsiella pneumoniae* by at least 2 log10 steps after 15 min and completely or nearly to the detection limit after 30 min at pH 7.1 and 37°C. The ascending order, from the lowest to the highest susceptibility was *S. aureus*, *S. epidermidis*, *A. baumannii* and *E. faecium* (LVRE) < *E. coli*, *P. aeruginosa*, *E. faecium* (VRE) < *K. pneumoniae*. Although these differences were statistically significant, they appear too small for a clinical relevance, and all strains proved to be fully susceptible.

**Conclusions:** The activity of N-chlorotaurine against these clinical isolates proved to be similar to that against non-resistant ATCC strains and therefore not to be influenced by antibiotic resistance. This can be explained by the oxidizing and chlorinating mechanism of action of N-chlorotaurine, which leads to an attack of multiple targets in the microorganisms. Therefore, the antiseptic is of advantage to antibiotics when topical treatment is estimated as sufficient.

**V 13**  
**Microbiology analytics and clinical tool for reporting pathogens and AMR**

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**Background:** Antimicrobial therapy correctness, antimicrobial resistance (AMR) as well as adverse events prevention are of increasing clinical and epidemiological importance. Hence, antimicrobial stewardship programs (ASPs) rely on monitoring, analyzing, and reporting of microbiological test results which can effectively be supported by information technology (IT).

**Material/methods:** At the University Hospital Vienna (UHV), antimicrobial stewardship involves many stakeholders: clinicians, laboratory and infection control personnel, hospital and quality management, epidemiologists, and researchers. In such a diverse environment, computer-based support is essential. Over the last years, a versatile server- and web-application-based software, called Momo (monitoring of microorganisms), was developed and put into operation. A large array of antimicrobial stewardship demands could thus be met.

**Results:** Momo is in routine operation since September 2018. It receives all relevant data on bacteria, fungi, PCR, serology, toxins, and microscopy from the UHV's microbiology laboratory. Momo provides support through (a) single patient overviews, (b) customizable queries with full microbiological data, (c) frequency distributions of the selected parameters, (d) graphically displaying AMR patterns, and (e) displaying AMR changes over time. Careful consideration was given to the terminology system. A specific module supports timely management of main terms, synonyms, changes in taxonomy, and multiple superordinate concepts. In its new release, Momo can be accessed
with one click from the UHV’s intensive care information systems as well as from the UHV’s overall hospital information system. Patient- as well as ward-specific microbiological results may be displayed.

At present, more than 1.7 million reports are available for analysis.

**Conclusions:** Momo is well integrated and increasingly used in UHV; at present several hundred times a week. Versatile analytic tools (patient- as well as epidemiology-oriented) combined with one click access make it an effective ASP supporting tool for daily clinical use.

**SITZUNG 4: UMWELTHYGIENE**

**V 14  Environment and health: Assessing technology-critical elements in urban spheres**

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Given the boom in new technologies, technology-critical elements (TCEs) including germanium, gallium, indium and others are increasingly released into the environment. However, scientific evidence is lacking regarding quantities, environmental cycles, and potential health hazards. The research project **TecEUS - Technology-Critical Elements in Urban Spheres** aims to assess the release, exposure, and accumulation of selected TCEs in the urban environment of Vienna. One major motivation is to systematically explore the effectiveness of urban green façades as filters for TCEs and their potential as human health preventive measure. A mobile module-based wind tunnel (WT) was developed to investigate the interaction between airborne particulate matter (PM) and various surface structures. The external dimensions were 4.33 m × 1.96 m × 1.73 m (lwh). The tunnel provided a cross-section of 0.40 m × 1.10 m (wh) and a total volume of 2.84 m³. An exchangeable test section in the WT offered a vertical area of one square meter to introduce variable installations. We measured atmospheric parameters (temperature, humidity, flow speeds and flow directions). Losses of ambient PM within the blank tunnel were less than 10% for particle counts (>0.25 µm), while smaller losses were obtained for PM1 and PM2.5. Due to the modular design, the WT could be divided into seven segments enabling flexibility in setting, easy transport and set up at different locations. So, real-time and long-term collection of ambient air pollutions on plant surfaces located in the WT allows for determining TCE detection.

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