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Paper Poster Session

Clostridium difficile: epidemiology and risk factors

High prevalence of binary toxin-producing Clostridium difficile among hospitalized patients in Western Austria 2014

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Background: Several prevalence studies in Austria during the last years demonstrated a rising number of binary toxin producing *C. diff* in hospitalized patient due to ribotype 027 in eastern Austria but not in the western parts of the country.

Material/methods: Therefore we set up a small regional prospective study from December 2013 to August 2014 characterizing molecular pattern of 110 detected *C.diff* strains isolated from stool specimen originating from 6 hospitals (including our university hospital). Ribotyping and detection of the genes for toxin A, toxin B and binary toxin were performed. In addition, three most abundant deletions in *tcdC* gene were parallel investigated and correlated with binary toxin production and ribotype.

Results: In 19 isolates (17,3% of all 110 samples) the binary toxin gene was detected. Ribotype 078 belonged with in total 11 isolates to the most frequent ribotype in the study. Four next binary toxin positive isolates were derived from a single patient with recurrent disease and detected as ribotype

027. The remaining four isolates of binary toxin positives belonged to other various ribotypes. The second most common ribotype found was ribotype 001 (10 isolates, 9%). Moreover, detecting the *tcdC* deletions we have found 9 isolates with 18 bp deletion not associated with ribotype 027. Those isolates were tested as binary toxin positive or negative and belonged to different ribotypes (001, 081, AI-84, 080, 235). Within the ribotype 078 - or 001 patient group no clinical-epidemiological link or suspected transmission has been demonstrated suggesting the prevalence derived from the community

Conclusions: Considerably high prevalence of binary toxin producing *C. diff* was found for the first time in a patient cohort in Austria. Due to laboratory diagnostics lacking routine detection of the binary toxin gene until now the number of CDI patients with ribotype 078 and others was underestimated inadvertently in the community in western Austria. These observations urge to further alterations in the routine laboratory diagnostics and broader clinical and epidemiological investigations.