

O160

Abstract (oral session)

**Comparison of galactomannan test from serum and urine specimens in patients with haematological malignancies: a cohort study**

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Objectives: Serum galactomannan (GM) has been established as an important method for diagnosing invasive aspergillosis (IA). In this study we evaluated performance of GM test in urine and compared results with those obtained in serum. Methods: The study was performed from July-October 2012 in adult patients with underlying hematological malignancies hospitalized at the Department of Haematology at the Medical University of Graz in Austria and approved by the local ethics committee. Serum and urine samples were collected and tested twice weekly (always on the same day). For serum samples an optical density index (ODI)  $\geq 0.5$  was considered positive. Results: Each 192 serum and urine samples were collected in 35 patients. 15/192 (7.8%) serum samples in nine patients resulted positive. Sensitivity, specificity, PPV and NPV for different cut-offs from urine samples (compared to serum results) were as follows: 0.2 ODI: 25%, 93%, 24%, 93%; 0.15 ODI: 40%, 89%, 23%, 94%; 0.1 ODI: 56%, 84%, 21%, 95%. A cutoff of 0.15 ODI was chosen. 9/15 positive serum GM samples gave negative results in urine; 4 of those were derived from a patient with increasing positive serum GM levels in whom urine samples became positive with a 2 week delay. In 2 probable IA cases initially positive urine samples became negative under appropriate antifungal therapy while decreasing serum samples remained positive. 2 serum samples were considered false positives, 1 urine sample false negative. Urine resulted positive in 19/177 negative serum GM samples. 16 of those were considered false positives. In 1 patient (prob IA) urine GM resulted positive 3 days before serum GM; in 2 prob IA cases urine remained GM positive under appropriate antifungal therapy while serum samples were already negative again. Spearman-Rho correlation analysis revealed a significant positive correlation between serum and urine samples ( $p < 0.001$ ;  $p = 0.27$ ). Conclusion: A significant positive correlation was found between urine and serum GM results. The 0.15 urine GM cut-off showed a high specificity but low sensitivity of 40% when compared to serum samples. Analyzing GM development over time and clinical data, however, the number of urine samples that were actually considered to have resulted falsely negative decreased to about half (5 samples from 2 patients). Further studies evaluating larger sample sizes of GM positive serum samples are needed before urine GM testing can be introduced into clinical routine.