

**P2553 Application of laser light distribution technology for the diagnostics of catheter-associated infections**Liubov Boronina\*<sup>1</sup>, Elena Samatova<sup>2</sup>, Svetlana Panova<sup>2</sup><sup>1</sup> Ural State Medical University, Yekaterinburg, Russian Federation, <sup>2</sup> Regional Children's Clinical Hospital, Yekaterinburg, Russian Federation**Background:** assess the possibility of using accelerated methods of diagnosing catheter-associated infection in children to obtain fast, but at the same time accurate results, culture catheters.**Materials/methods:** From March 6 to November 6, 2018, 197 catheter samples from 197 children were examined, mainly from reanimation, surgical and oncohematological departments, mainly CVC, deep venous line, vascular, umbilical, ventricular catheter. When sterility was observed, each catheter with a length of at least 5-6 cm was divided by palam. Sowing of one of the fragments was carried out by the classical semi-quantitative culture method according to D. Maki. The second half of the catheter was studied using an ALIFAX HB&L LIGHT analyzer (Alifax, Italy) with laser light scattering technology, which allows to detect fissile bacteria.**Results:** In 156 (79.2%) samples studied using the D. Maki method and using the ALIFAX HB&L LIGHT semi-automatic analyzer (Alifax, Italy), a correlation was found: ALIFAX - negative result (microorganism was not detected), culture method - microorganism growth not found. In 25 samples (12.6%) a correlation was found with the results of a culture study for D. Maki. Microorganisms that were diagnostically significant for catheter-associated infection (13 samples, 6.6%) were found: *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Streptococcus agalactiae*, *Klebsiella pneumoniae*, *Escherichia coli*, *Enterococcus sp.*, *Enterococcus faecalis*, *Enterobacter cloacae*, *Acinetobacter baumannii*, *Staphylococcus hominis*, *Staphylococcus haemolyticus*, both in monoculture and in association. The result of ALIFAX was from 1000 to 12.000.000 CFU/ml. In 12 samples (6%), mainly coagulase-negative staphylococci (CNS, *Staphylococcus epidermidis*, *S. haemolyticus*), *Corynebacterium sp.*, *Streptococcus sp.* Were detected both in monoculture and in association, a titer of less than 50 CFU/ml indicates more likely colonization of the catheter. 16 samples (8.2%) were negative in ALIFAX, and the results of the culture method were positive - they were mainly distinguished by CNS in an amount of less than 15 CFU/catheter, which indicates possible contamination.**Conclusions:** The results of bacteriological examination of catheters on the analyzer and D. Maki culture method coincided in 91.8% of cases. Infections related to the catheter are proven in 8 cases.