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Background. Aerococcus urinae is frequently identified by MALDI-TOF in urinary specimens. It is generally susceptible to β-lactams, but its susceptibility pattern to fluoroquinolones (FQ) remains unpredictable. The goal of this study was to evaluate the performance of the gradient diffusion method (Etest®) to determine FQ susceptibility compared with broth microdilution (BMD) and agar dilution (AD).

Methods. Prospectively collected isolates of A. urinae from urinary tract specimens originating from 5 hospitals in Quebec city and Montreal were identified by MALDI-TOF (Vitek-MS). All isolates were tested using BMD according to CLSI guidelines, and also with Etest® strips on MH agar w/ 5% sheep blood. Isolates showing trailing, insufficient growth or discordance between both methods were further tested by agar dilution (MH agar w/5% horse blood + β-NAD) according to EUCAST guidelines. Breakpoints were interpreted using CLSI M45-A3. Combined results of BMD and AD were then compared with Etest.

Results. Of the 207 isolates of A. urinae tested, 37 showed trailing (17,8%) and 19 (9,2%) insufficient growth with the BMD method and were retested using AD. Moreover, 38 isolates (ciprofloxacin) and 13 isolates (levofloxacin) showed either lack of categorical or essential agreement between Etest and BMD and were also retested using AD to arbitrate discrepancies. Susceptibility profiles combining BMD and AD are presented in Table 1. As suggested in EUCAST guidelines, readings were much clearer and growth was better with AD compared with BMD. The categorical agreement of the Etest® with BMD+AD was 95% for ciprofloxacin and 97% for levofloxacin. Essential agreement was 95% for ciprofloxacin and 97% for levofloxacin. No very major errors were identified. Two major errors were identified for levofloxacin (1,2%) and one for ciprofloxacin (0.6%).

Conclusion. Gradient diffusion method using Etest® strips on MH agar w/ sheep blood is a valid method to determine susceptibility to FQ for urinary tract isolates. As a reference method, AD provides clearer endpoints and better growth than BMD for FQ susceptibility testing.

Table 1 : *Aerococcus urinae* susceptibility profile with combined results of BMD and Agar dilution

	Susceptible – n (%)	Intermediate – n (%)	Resistant – n (%)
Ciprofloxacin (n=207)	171 (83%)	8 (4%)	28 (14%)
BMD (n=113)	88	4	21
Agar dilution (n=94)*	83	4	7
Levofloxacin (n=207)	169 (82%)	6 (3%)	32 (15%)
BMD (n=138)	106	2	30
Agar dilution (n=69)*	63	4	2

*Agar dilution conducted if insufficient growth or trailing with BMD, or discrepancy between Etest and BMD

Disclosures. **All authors:** No reported disclosures.

2150. Detection and Characterization of Viral and Bacterial Pathogens in Tonsillar Tissues of Children Undergoing Tonsillectomy

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Background. The diagnosis of upper respiratory infections is commonly made using nucleic acid amplification technologies for viruses and bacteria. The impact of latency and colonization are not often appreciated. We aimed to detect viruses and bacteria present in tonsil and adenoid tissues from children during the absence of acute infection symptoms.

Methods. Remnant tonsil and adenoid tissues were obtained from children undergoing tonsillectomy procedures. Nucleic acids of viruses and bacteria were detected using laboratory developed PCRs targeting Epstein–Barr virus (EBV), Adenoviruses (AdV), human herpes virus 6 (HHV6), human enteroviruses (HEV), Group A streptococcus (GAS), Kingella kingae (KKN), *Staphylococcus aureus* (SA), *Streptococcus pneumoniae* (SPN), *Arcanobacterium haemolyticus* (AHE), *Fusobacterium necrophorum* (FNE), *Mycobacterium pneumoniae* (MPN) and *Neisseria meningitidis* (NM). The genogroup of AdV and the type of HHV6 were determined as well. Demographics, clinical presentation and detection rates of these viruses and bacteria were analyzed.

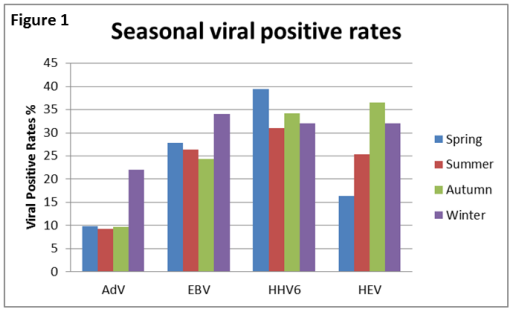
Results. During the study period (April 2018 and March 2019), 239 samples were collected from patients <18 years with an average age of 5.1 years. More male subjects than female subjects were included (57.7% vs. 42.3%). Most of the patients underwent tonsillectomy due to adenotonsillar hypertrophy (93.3%). Thirty (12.5%) also had a history of tonsillitis, 224 (93.7%) sleep apnea, 36 (15.1%) otitis media, 35 (14.6%) Eustachian tube dysfunction and 46 (19.2%) had other conditions. The detection of the pathogens among each age group is presented in Table 1. The seasonal distributions of virus positivity are shown in Figure 1.

Conclusion. The detection rates of each virus and bacterium in the tonsillar tissues from children absent of acute infection symptoms vary in each age group and fluctuate among seasons. In the molecular era when syndromic real-time multiplex PCR kits can provide sensitive and rapid results for a wide range of pathogens, it is important to understand the meaning of detection and differentiate between an infection and colonization or latency.

Table 1

Age Groups (y)	N	EBV(%)	HHV6(%)	AdV(%)	HEV(%)	GAS(%)	SA(%)	SPN(%)	KKN(%)	AHE(%)	FNE(%)	MPN(%)	NM(%)
<3	46	23.9	52.2	10.9	37.0	13.0	19.6	43.5	4.4	0	8.7	0	0
3-5	99	22.2	31.3	16.2	32.3	20.2	21.2	47.6	0	0	2.0	3.0	1.0
6-8	74	27.0	48.7	8.1	9.5	29.7	21.6	28.4	0	0	0	0	0
>9	20	50.0	25.0	5.0	10.0	5.0	15.0	15.0	0	5.0	10	0	0

Figure 1



Disclosures. **All authors:** No reported disclosures.

2151. Biofilm and Metallo-β-Lactamase (MBL) Production Among Imipenem-Resistant *Pseudomonas aeruginosa* and *Acinetobacter* spp.

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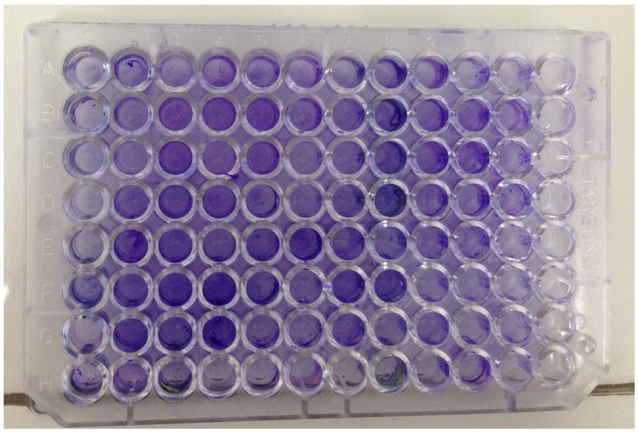
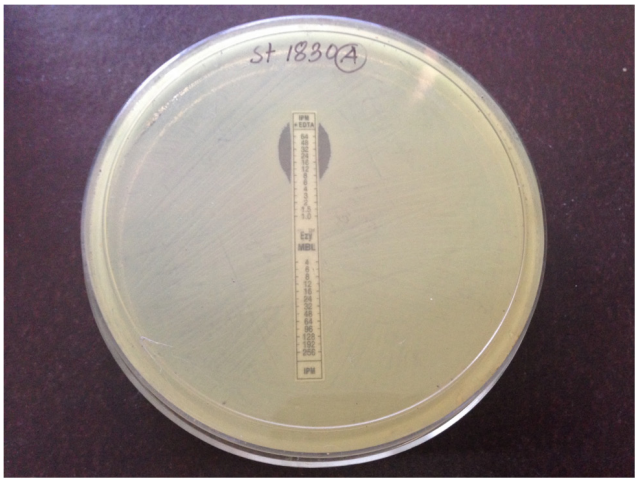
Background. *Pseudomonas aeruginosa* and *Acinetobacter* spp. head the list of hospital-acquired infections. Resistance to carbapenem as reserve drug is under threat with the emergence of Metallo-β-lactamase (MBL) and biofilm producing bacterial strains. This study was thus undertaken to determine the rate of MBL and biofilm production among imipenem-resistant *P. aeruginosa* (IRPA) and imipenem-resistant *Acinetobacter* spp. (IRAS) isolates.

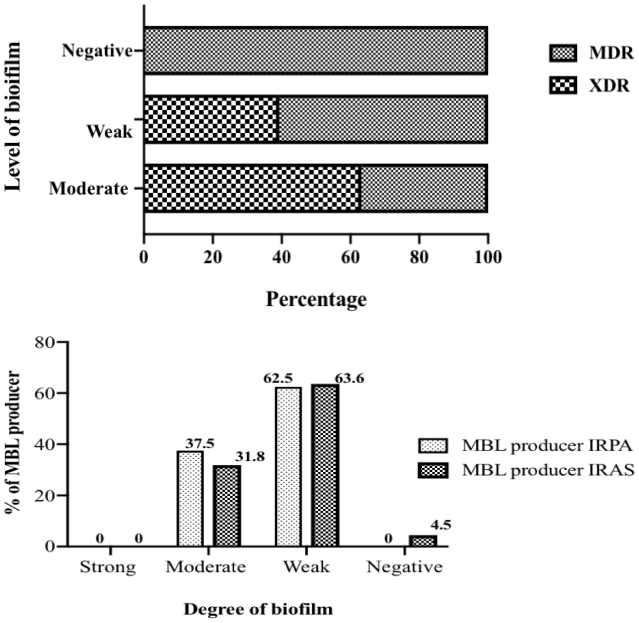
Methods. A total of 79 *P. aeruginosa* and 117 *Acinetobacter* spp. were isolated from different clinical specimens of patients visiting Manipal Teaching Hospital, Pokhara Nepal from July 2016 to January 2017. Isolation, identification and antibiotic susceptibility testing of the isolates were performed by standard microbiological techniques. Combined disc test and Epsilometer test (E-test) were employed to detect MBL in IRPA and IRAS isolates. Microtiter plate using crystal violet method was employed for detection of biofilm in imipenem-resistant isolates.

Results. 9 (11.4%) of *P. aeruginosa* and 49 (41.9%) of *Acinetobacter* spp. were Multidrug Resistant (MDR). Similarly, 22 (27.8%) of *P. aeruginosa* and 23 (19.7%) of *Acinetobacter* spp. were Extensively Drug Resistant (XDR). Imipenem resistance was detected among 15 (19%) *P. aeruginosa* and 57 (48.7%) *Acinetobacter* spp. isolates. 8 (53.3%) of IRPA and 22 (38.6%) of IRAS isolates were MBL producers while all (100%) of IRPA and 47 (82.5%) of IRAS were biofilm producers. All the biofilm producer IRPA isolates were XDR and 62.5% of XDR IRAS strains were moderate biofilm producers. However, 80% of IRPA, 49.1% of IRAS and 63% of both MBL producer isolates were weak biofilm formers. Polymyxin B and ampicillin-sulbactam showed a better degree of susceptibility against MBL cum biofilm producer IRPA and IRAS isolates respectively.

Conclusion. The study showed high propensity of IRPA and IRAS to form biofilm, which is strongly associated with higher drug resistance. Such high rate of MBL and biofilm producing *P. aeruginosa* and *Acinetobacter* spp. alarms the rapid spread of such strains in our hospital setting.







Disclosures. **All authors:** No reported disclosures.

2152. Detection of Uropathogens Using BD Kiestra™ Total Laboratory Automation with Urine Culture Application

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Background. Urine is the most frequently cultured specimen type for the majority of clinical microbiology laboratories. Typically, around 30% of cultures are positive for uropathogens with 70% yielding insignificant or mixed growth. BD is developing a software Urine Culture Application (UCA) for the BD Kiestra Total Laboratory Automation (TLA) system to screen images of urine culture plates, sort them based on growth vs. insignificant growth and also allow for presumptive pathogen identification.

Methods. De-identified urine specimens were inoculated onto BD BBL™ CHROMagar™ Orientation Media (CHROM; BD, Sparks, MD), CHROM/Trypticase™ Soy Agar II with 5% Sheep Blood (TSA) biplate, BD BBL MacConkey II agar, and TSA using the BD Kiestra TLA system. Plates were imaged at 24 hours using the BD Kiestra™ ReadA Compact imaging acquisition software and an algorithm was applied to the images using the UCA (Version 2.0). Semi-quantitative measurements of <100, 100–1,000, 1,000–10,000, 10,000–100,000, and >100,000 cfu/mL growth were determined by UCA for all media types and presumptive ID was determined using CHROM. Manual reading of the images by two technologists was the gold standard for comparison. For discrepant results, a third manual reader was used as an arbitrator.

Results. Testing between 877 and 934 urine specimens on each of five media types using UCA resulted in an exact semi-quantitative agreement with manual reading for 85.5–95.0% of specimens (Table 1). If semi-quantitative values ± one category of agreement are included, the number rises to 98.2–99.4% agreement. Using CHROM for presumptive identification of pure or predominant organisms, UCA was in agreement with manual identification in 251 of 272 cultures (92.3%). Of the 21 discrepant organisms, 19 were classified as "other" by manual reading but were identified as specific organisms by UCA. Definitive organism identification was not performed.

Conclusion. UCA was able to accurately categorize bacterial growth into five semi-quantitative categories using five media types. Pure and predominant uropathogens were accurately identified from CHROM using UCA. The use of UCA software application may enable laboratories to save time screening urine cultures by allowing more efficient use of technologist time.

Table 1. Semi-quantitative correlation between urine culture application and manual culture reading

Media	N=	Exact Agreement	%	Agreement +/- 1 category	%	Agreement > 1 category difference	%
BBL™ CHROMagar™	934	822	88.0	928	99.4	6	0.6
BBL™ CHROMagar™ biplate	878	751	85.5	868	98.9	10	1.1
Trypticase™ Soy Agar II with 5% Sheep Blood	921	803	87.2	911	98.9	10	1.1
Trypticase™ Soy Agar II with 5% Sheep Blood biplate	877	745	84.9	861	98.2	16	1.8
BBL MacConkey II agar	922	876	95.0	913	99.0	9	1.0

Disclosures. **All authors:** No reported disclosures.

2153. Clinical Impact of Addition of Oropharynx MRSA PCR to Anterior Nares MRSA PCR for Patients Admitted with Pneumonia

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Background. Anterior nares (AN) MRSA PCR can help identify MRSA colonization as a risk factor for MRSA pneumonia and can be especially useful, given high NPV, in making treatment decisions when lower respiratory tract (LRT) cultures are lacking. Oropharynx (OP) MRSA carriage without AN colonization can occur suggesting the potential benefit of duel site screening, but doubles resource utilization. We evaluated concordance between the AN and OP sites and whether the addition of OP MRSA PCR testing provides clinical benefit.

Methods. MRSA PCR was performed using Xpert SA Nasal Complete (Cepheid; FDA-cleared and modified). Results were retrieved from January 2017 to July 2018 for adult in-patients who received both AN and OP testing within the same calendar day. Medical charts were reviewed for a clinical course, respiratory culture results, and effect of discordant PCR results.

Results. AN and OP MRSA PCRs were performed on 1,419 adult inpatients, concordance was 96.5% (n = 1370, see Table). In 38 of 49 discordant cases, PCR was used to evaluate the etiology of pneumonia. Of those, 22 (58%) had LRT culture results available within 48 h to direct therapy. We further evaluated the value of OP PCR by focusing on AN-/OP+ (n = 22) discordant results, of which 16 were used to evaluate pneumonia. LRT culture results were available in 7 (44%) of these cases. Three had isolation of MRSA; however, the remaining 4 were culture-negative but still received vancomycin for an average of 5 days. Of the 9 that were AN–, OP+, and without culture results, only 4 had clinical signs and symptoms consistent with MRSA pneumonia. OP MRSA PCR is $303.

Conclusion. OP and AN MRSA PCR screening are highly concordant in patients with pneumonia. 355 AN/OP PCRs (4/1419), at > $100,000 in additional healthcare costs, were needed to detect one potentially missed MRSA pneumonia compared with AN PCR only approach. Our results suggest addition of OP MRSA PCR: (1) has limited clinical utility for pneumonia evaluation as it is unlikely to be discordant with AN testing, which will not significantly alter the very high NPV and when discordant (AN-/OP+) has a <50% PPV, (2) is unlikely to be cost-effective, and (3) has unintended consequences such as overuse of MRSA therapy. Additionally, there is an opportunity to improve PCR ordering to include only those situations in which LRT cultures are lacking.

	AN +	AN -
OP +	64	22
OP -	27	1306

Disclosures. Alexander Lepak, MD, Paratek Pharmaceuticals: Research Grant; Tetraphase Pharmaceuticals: Research Grant.

2154. Rapid Microorganism Identification From Blood and Enrichment Fluid Cultures Using MALDI-TOF Mass Spectrometry Following Abbreviated Incubation on Chocolate Agar Plates

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Background. The more rapidly a pathogen can be identified in cases of sepsis, the more swiftly targeted therapy can be commenced. We aimed to evaluate the accuracy