1329. Experiences and Emotional Challenges of Antiretroviral Treatment (ART)—Findings from the Positive Perspectives Study

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Session: 151. HIV: Care Continuum

Friday, October 4, 2019: 12:15 PM

Background. While advances in treatment have dramatically improved the lives of people living with HIV (PLHIV), a number of important unmet needs remain. We conducted an international survey of PLHIV to explore their treatment experience and emotional challenges of ART.

Methods. Qualitative in-depth interviews were performed with PLHIV to identify key hypotheses. A steering group (led by community members) developed the survey tool which was fielded online from November 2016 to July 2017 in 8 high-income countries in North America (NA), Europe, and Australia. A mixed sampling/recruitment approach was used to ensure a broad cross-section of PLHIV. Respondents were screened for eligibility prior to receiving access to the online survey.

Results. 1111 PLHIV were surveyed (74% male, 41% 35–49 years; 39% from NA). The majority (98%) were currently taking ARTs with 53% taking a single tablet regimen. Of those on treatment, 87% were satisfied with their current ART. Overall, results for NA respondents were similar to the global results. Many participants reported emotional challenges associated with their daily HIV treatment experience: 66% agreed taking ART every day was a reminder of their HIV status; 25% agreed being tied to a daily medication limited their day-to-day life; and 29% agreed they felt stressed and under pressure to take their HIV medication at the right time every day. Those not "open" about their HIV status were more likely to feel stressed by their medication and felt that it limited them. 37% of participants frequently or quite often hid their HIV medication to avoid revealing their HIV status, particularly amongst those who reported experiencing stigma or high emotional impact of HIV. 89% felt that advances in treatment will improve their quality of life. Reducing long-term adverse effects of ART and lowering dosing frequency were considered the most important areas for improvement; this was similar across demographics such as country, age, and gender.

Conclusion. In this international survey of PLHIV, despite overall satisfaction with current ART, significant emotional burden and daily impact of treatment persists. PLHIV consider the reduction of long-term adverse effects and dosing frequency important areas for improving ART.

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

1330. Evaluation of Multiple Host Response-Based Strategies to Classify Acute Respiratory Illness

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Session: 152. Host Responses to Diagnostics

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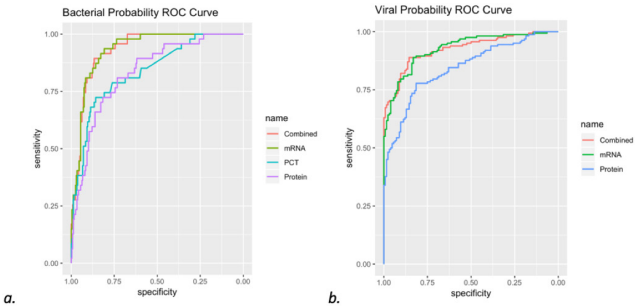
Background. Host response-based diagnostics are an alternative to pathogen-based tests. Host response strategies include proteomic and transcriptomic approaches. Here, we compare three host response strategies for ARI diagnosis: Procalcitonin (PCT), a 3-protein panel, and an mRNA panel.

Methods. PCT, a 3-protein panel (CRP, IP-10, TRAIL), and a host gene expression mRNA panel were measured in a cohort of 286 participants presenting to one of the four Emergency Departments with ARI due to bacterial (n = 47), viral (n = 162), or noninfectious (n = 77) etiologies. Multinomial logistic regression and leave-one-out cross-validation were used to train and evaluate the protein and mRNA panels. Performance characteristics were calculated for each method, and their combination, for the ability to discriminate bacterial vs. non-bacterial infection and viral vs. nonviral infection. PCT was not evaluated for viral vs. nonviral discrimination since it does not discriminate viral and noninfectious etiologies. McNemar's test was used to compare overall accuracy of mRNA and protein panels.

Results. For discriminating bacterial vs. non-bacterial etiologies, the mRNA panel had an AUC of 0.93 vs. 0.83 for both the protein panel and PCT. A model utilizing all three strategies was the same as mRNA alone. Using previously established cut-offs, overall accuracy was similar between mRNA and protein panels, but the protein panel had widely discordant sensitivity (43%) and specificity (92%). When selecting an optimal cutoff for the protein panel that balanced the two (82% and 73%, respectively), the mRNA panel had a significantly greater overall accuracy ($P < 0.001$). Similar results were found when discriminating viral vs. non-viral subjects: the mRNA panel (AUC = 0.93) outperformed the protein panel (AUC = 0.84). Combining the mRNA and protein panels was equivalent to the mRNA panel alone.

Conclusion. A host-based gene expression signature is the most effective platform for classifying subjects with bacterial, viral, or noninfectious ARI. A gene expression approach, when translated to a clinically available platform, may facilitate diagnosis and clinical management of acute infectious diseases, mitigating antibiotic overuse.



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1331. Interpretation and Application of Rapid Diagnostic Methodologies: The Positive Impact of Online, Curriculum-Based Learning

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Session: 152. Host Responses to Diagnostics

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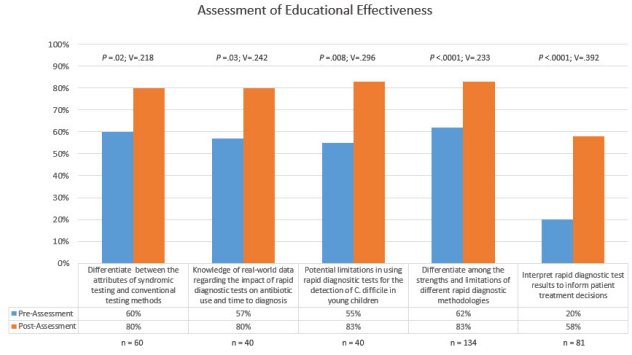
Background. Antibiotic resistance has become one of the most serious public health threats today. Used appropriately, newer rapid diagnostic methodologies have the potential to positively impact care by informing a more targeted treatment approach that can reduce inappropriate antibiotic use, support antimicrobial stewardship, shorten hospital stays, and improve clinical outcomes.

Methods. To improve ID specialists' knowledge and application of rapid diagnostic tests, a CME/ABIM MOC/ACCENT certified curriculum was developed. The curriculum comprised a series of 4 educational episodes, each with a video commentary from a clinical expert and each focused on a different site of infection: (a) Episode 1: CNS; (b) Episode 2: Gastrointestinal tract; (c) Episode 3: Respiratory tract; and (d) Episode 4: Bloodstream. The episodes in the curriculum were launched in serial fashion between October 30, 2018 and February 11, 2019, on a website dedicated to continuous professional development. Educational effectiveness was assessed with a repeated-pairs pre-/post-assessment study design; each individual served as his/her own control. A chi-square test assessed changes pre- to post-assessment. P values of < 0.05 are statistically significant. Effect sizes were evaluated using Cramer's V (<0.05 modest; 0.06–0.15 noticeable effect; 0.16–0.26 considerable effect; >0.26 extensive effect).

Results. 15,092 HCPs, including 10,894 physicians have participated in the curriculum. This initial analysis comprises data from the subset of ID specialists from each episode who answered all pre-/post-assessment questions through March 18, 2019; data collection is ongoing. Following participation, significant improvements were observed overall ($P \leq 0.002$ for each episode) and on the specific topics assessed in each episode (Graph). Additionally, 51%–55% of ID specialists indicated an intent to modify their diagnostic approach and 15%–29% had increased confidence in applying the rapid diagnostic results into patient care.

Conclusion. This educational curriculum significantly improved ID specialists' knowledge of the strengths and limitations of different rapid diagnostic methodologies and improved the applications of test findings into clinical decision-making. These findings highlight the positive impact of well-designed online education.



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

1332. Identification of Genetic Markers Linked to Recurrent Methicillin-Resistant *Staphylococcus aureus* Skin and Soft-Tissue Infections

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