

**P1075**

**Paper Poster Session**

**Disinfection and healthcare-associated infections**

**Impact on workflow of ATP testing to monitor manual cleaning of gastroscopes**

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**Background:** Endoscopes contain high bioburden after use, they should be cleaned, and subjected to high-level disinfection (HLD). Inadequate cleaning or HLD may lead to infection transmission. Adequate cleaning is essential to ensure satisfactory HLD. There is no consensus about the best method to monitor endoscope cleaning. Adenosine triphosphate bioluminescence (ATP) permits auditing cleanliness of endoscope channels in real time. There is a lack of experience in clinical endoscopy settings. In this work, we used ATP tests to assess the quality of manual cleaning of gastroscopes in a busy endoscopy clinic, and determined the workload impact related to this testing.

**Material/methods:** This was a prospective study in a Digestive Endoscopy Center of a hospital located in São Paulo, Brazil. The ATP tests results post manual cleaning were compared to bioburden, and protein levels in the same channels. Immediately after gastroscopies, suction channel samples were obtained by flushing 40 mL sterile water from the umbilical end of the suction channel to the distal end. There were samples from 24 gastroscopes before and 24 after manual cleaning. The manual cleaning was done according to the center's protocol. The samples were tested for viable count, ATP and protein level. The ATP cutoff for adequate cleaning was set at <200 RLUs. Protein determination was performed with the QuantiPro BCA Assay Kit. Microbiological cultures were performed using serial 1:10 dilutions (0.1 mL) inoculated onto blood agar medium. The time spent to perform the tests was recorded. For the statistics analysis we used the Wilcoxon test considering 95% of significance.

**Results:** The average time taken to perform manual cleaning, ATP tests, and for total reprocessing of the gastroscopes was 16, 8 and 30 minutes, respectively. The values for ATP, protein, and bioburden were significantly different before and after cleaning (Table 1). After manual cleaning 14/24 (58.3%) samples had no microbial growth. The mean of bioburden reduction after manual cleaning was 2Log<sub>10</sub> among samples with growth.

Table 1. Summary of bioburden, protein, and ATP levels in endoscopes before and after cleaning.

Variable	RLU			Protein ug/mL			CFU CFU/mL		
	Pre-clean	Post-clean	<i>p</i>	Pre-clean	Post-clean	<i>p</i>	Pre-clean	Post-clean	<i>p</i>
N = 24									
Mean	23,057.1	498.8	<0.001	321,235	2,020	<0.001	4,549.9	21.3	<0.001
Minimum	2,150	53		75	0		100	0	
Maximum	227,391	1,536		911	9,103		26,400	266.7	
SD	57,868.5	447.9		228,1172	2,170		5,944.6	56.7	

**Conclusions:** The ATP test was useful for monitoring gastroscopes manual cleaning and the impact of sample collection and ATP testing on workload in the clinic was minimal. Future studies are needed to determine the impact of gastroscopes re-cleaning when ATP is  $\geq 200$  RLU.