

BACKGROUND

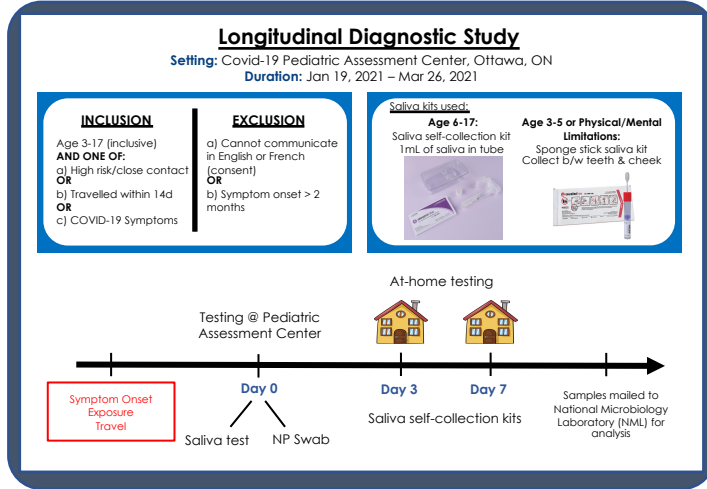
- Accurate and timely testing for SARS-CoV-2 in the pediatric population has been crucial to control the COVID-19 pandemic
- Saliva testing has been proposed as a less invasive alternative to nasopharyngeal (NP) swabs
- Our team previously compared detection rates of NP swabs with at-home self-collection saliva kits for SARS-CoV-2
- Limited literature exists supporting at-home salivary testing in the pediatric population

OBJECTIVES

- To compare the detection of SARS-CoV-2 using saliva versus nasopharyngeal swab in the pediatric population
- To determine the optimum time of testing for SARS-CoV-2 using saliva

METHODS

Figure 1: Summary of study methods



RESULTS

Figure 2: Participant Baseline Descriptive Results

	N=1580		N=1580	
Test Type	SPIT: 1042 (66%)		Symptomatic	1032 (65.3%)
	SPONGE: 538 (34%)		Median # of symptoms (among symptomatic pts)	3 [2-4]
Age	3-5yo: 326 (20.6%)		Positive Exposure	650 (41.1%)
	6-8yo: 368 (23.3%)		Travel within 14d	10 (0.63%)
	9-11yo: 375 (23.7%)			
	12-14yo: 297 (18.8%)			
	15-17yo: 214 (13.5%)			

Figure 3: Contingency Table of Concordant and Discordant Test Results

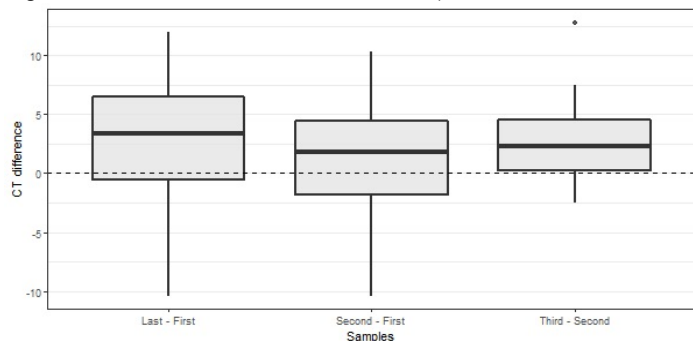
		NP SWAB			Overall Concordance: 99.0% [95%CI: 98.3-99.4] Agreement between NP + Saliva: • Cohen's Kappa = 0.84 [95% CI 0.76-0.92] • PABAK value = 0.98 [95% CI 0.97-0.99]
		Positive	Negative	Total	
SALIVA	Positive	44 (73.3%)	8	52	Sensitivity: 84.6% [95%CI: 71.9-93.1%] Specificity: 99.5% [95%CI: 99.0-99.8%]
	Negative	8	1520	1528	
	Total	52	1528	1580	

Average Test Positivity in Ottawa = 2.5-7.5% Total Positive = 60 / 1580

DISCUSSION

- Overall concordance between tests was 99.0%
 - Among those testing positive, 73.3% were concordant between saliva and swab
 - Similar rates to previous studies¹⁻³
- Salivary testing should be performed as close to symptom onset as possible
 - Viral loads decrease and CT values increase with time
 - Parallels results of adult populations using NP swabs⁴

Figure 4: Difference of CT Values for Saliva Samples



Interpretation of Results

- Later date subtracted by earlier date always yielded **positive difference**
- Increasing trend in CT values over time
- More difficult to detect viral RNA over time

LIMITATIONS & CONCLUSIONS

LIMITATIONS

- No 'gold standard' for SARS-CoV-2 detection
 - All results assumed to be true
- Low positivity rate / prevalence
 - Adjusted Kappa (PABAK) value for agreement

CONCLUSIONS

Our study highlights the functionality & feasibility of using salivary testing as an alternative for SARS-CoV-2 detection in the pediatric population. Advantages of saliva testing may improve pediatric patient satisfaction & compliance to repeat testing in the future.

REFERENCES

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