

Potential for Streptococcus Bacteria Reinfection Due to Toothbrush Contamination in Patient's Testing Positive for Streptococcal Pharyngitis

Rachel Bradley, Pharm.D Candidate, Rayanna Moore, Pharm.D Candidate
Miranda Wilhelm, Pharm.D

SCHOOL OF PHARMACY

Background

- Streptococcal pharyngitis is a bacterial infection characterized by symptoms such as sore throat, redness of throat/tonsils, swelling of tonsils/lymph nodes, and appearance of white patches on tonsils.
- Limited data is available on the subject on whether a toothbrush needs replaced after infection of streptococcal pharyngitis

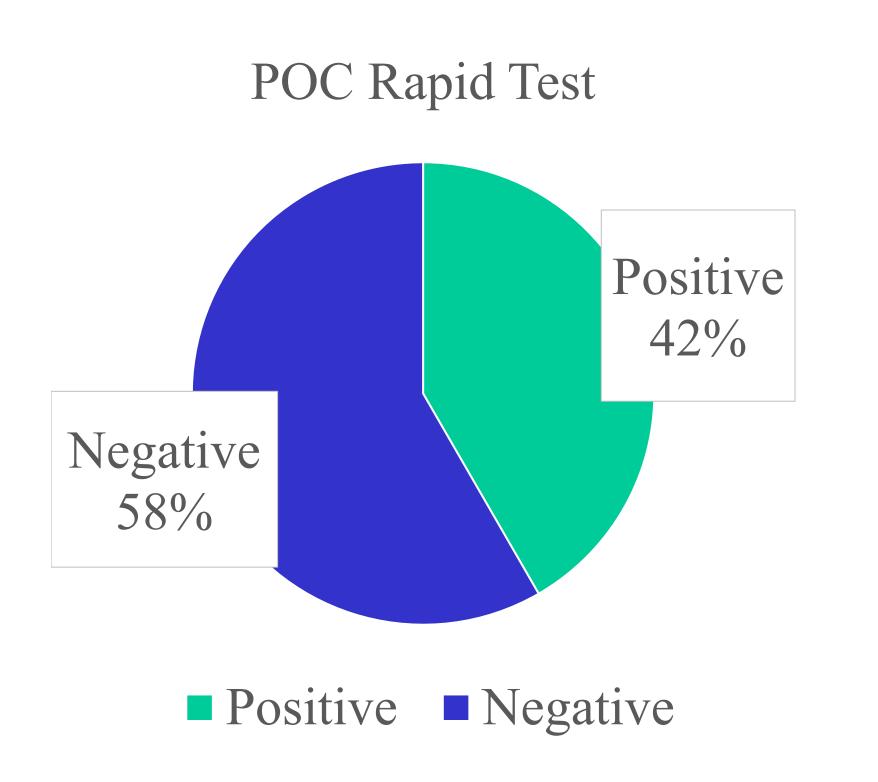
Methods

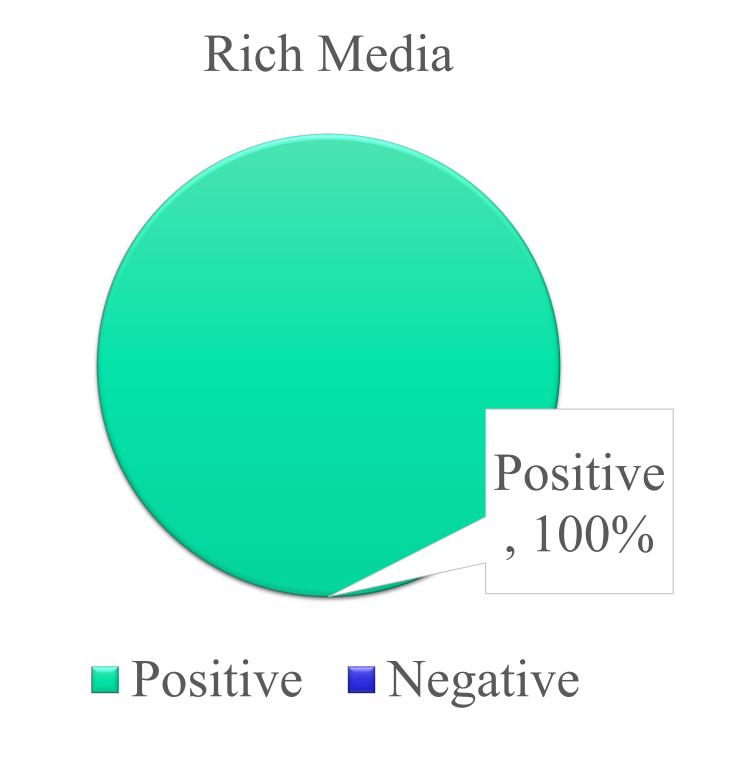
- Observational study; sample goal of 100
- Students called Health Service to schedule appointment
- Triage staff asked students to bring in toothbrush if having any upper respiratory symptoms
- Per provider discretion, a strep test was performed
- If positive, providers asked for consent to use toothbrush for the study along with the time teeth were last brushed
- Toothbrush was tested using POC strep tests and microbiology lab media
- Positive results were recorded as a 1, negative as a 0; interpreted as percentages and averages

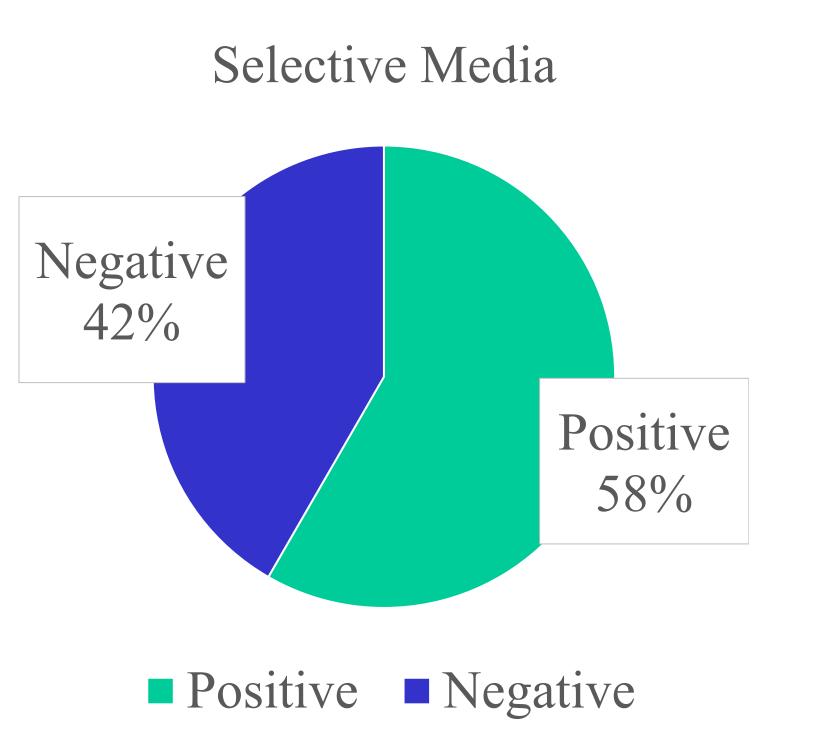
Results

- Total of 12 toothbrushes collected
- 5 positive POC tests
- 12 rich media growth
- 7 selective media growth
- Cultured an average of 2.7 days after collection

Toothbrush No.	Date Collected	POC Results	Rich Media Result	Selective Media Result	Hours Since Last Brush at Time of POC Test
1	9/5/24	0	1	1	2 hrs. 55 min
2	9/6/24	0	1	0	7 hrs. 0 min
3	9/12/24	1	1	0	3 hrs. 50 min
4	9/17/24	0	1	0	6 hrs. 20 min
5	10/10/24	1	1	1	27 hrs. 11 min
6	10/10/24	0	1	1	3hrs. 19 min.
7	10/15/24	0	1	0	22 hrs. 20 min
8	10/16/24	0	1	1	7 hrs. 45 min
9	10/17/24	1	1	1	1 hr. 0 min
10	10/22/24	1	1	1	3 hrs. 15 min
11	11/7/24	1	1	0	3 hrs. 15 min
12	12/3/24	0	1	1	1 hr. 0 min







Limitations

- Sample goal not met
- Frequent walk-in visits
- Understaffing
- Appointments between class periods
- Long periods between time of culture

Conclusion

- Over half of the toothbrushes collected showed evidence of growth on selective media
- Supports claim that it could be possible for reinfection via a toothbrush
- Larger studies need to be performed
- Patients should be recommended to dispose of their toothbrush and replace it with a new one after being diagnosed with streptococcal pharyngitis