ReddyPort® swab liquid aspiration risk assessment whitepaper

ReddyPort NIV Maintenance products

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Risk assessment test performed at ReddyPort Testing Lab in Salt Lake City, Utah.

Executive Summary

A continuing point of concern for clinicians when utilizing the ReddyPort® NIV Maintenance components is the amount of liquid that is being delivered to the patient and the potential for aspiration of this liquid. The purpose of this study was to identify the amount of liquid that the ReddyPort NIV Maintenance Suction Swabs can hold. It was found that the absolute maximum amount of liquid that can be contained within the swab was 4.33 mL. During routine use of the suction swab for cleaning *(dipping and spinning the swab within the solution)*, the swab was found to hold only 0.65mL of liquid. In the extreme-case scenario *(leaving the swab in water for 30 minutes)* it was found that the moisturizer swabs only hold 2.58 mL of liquid.

It is clear after testing that the amount of fluid that the swab holds is small and the risk of aspiration with relation to utilizing the NIV Maintenance Suction Swabs is probably negligible.

Background

A consistent point of feedback or apprehension about ReddyPort products has been the concern regarding aspiration of the liquids that are introduced into the mask during NIV Maintenance *(oral care)*. It was necessary to quantify the amount of liquid that was capable of being introduced into the airway.

Approach: Bench Test

Thirty ReddyPort NIV Maintenance Suction Swabs were utilized and subjected to varying clinical use simulations to determine the amount of liquid that could be introduced into the airway. The testing was performed in the ReddyPort Laboratory in Salt Lake City, Utah. The first test was to determine the maximum amount of liquid that the suction swabs could hold and included pressing the foam up against the wall of a water cup in all orientations to fully saturate the suction swab *(saturated)*. The amount of liquid in the suction swab was then measured utilizing a weight-based method.

The test for determining the volume of liquid during routine clinical use involved dipping the suction swab into a ReddyPort solution cup in a manner indicative of the expected use. Finally, for the extreme-case scenario, the suction swab was soaked in a water cup for thirty minutes.

Healthy Volunteer Test

Direct laryngoscopy was performed while the volunteer was on BiPAP (8-20/5-10 cm H_2O) and oral cavity was cleaned with suction swab dipped in blue dye. Despite vigorous swabbing for 3 minutes, no blue dye was visualized at the larynx.

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Clinical Experience

No cases requiring escalated care due to aspiration have been reported among the 8600 patients who have been treated with ReddyPort oral care products.

Results

The results of the testing including the average of all of the measured liquid within the suction swab are shown in the table in figure 1. Observations in healthy volunteers and patients being treated with ReddyPort products have not demonstrated aspiration episodes.

Conclusion

Following testing, it was determined that the risk of patient aspiration related to the use of the ReddyPort NIV Maintenance product line is probably negligible. The volumes of liquid present in the clinical scenarios run do not present clinical risk for aspiration. Additionally, the majority of the liquid within the suction swab will be deposited on the oral surface, and be suctioned away during the cleaning process, or remain on the swab upon removal of the suction swab from the mouth.

Sample number	Saturated	Dip approach	Soak approach
1	4.12	.57	2.4
2	4.36	1.20	2.55
3	4.04	.61	1.98
4	4.36	.55	2.01
5	4.63	.74	2.35
6	3.99	.51	3.03
7	4.75	.70	3.33
8	4.52	.55	1.97
9	4.46	.59	2.70
10	4.12	.50	1.87
AVG	4.33	.65	2.39

Figure 1

For more information call **801.899.3036**.

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