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**Title:** Conventional cytology vs liquid based cytology in preparation of bronchial wash, does the later have potential advantages?

Dr. Bhuvaneshwari 9688 Kathiresan doctorbhuvaneshwari@rediffmail.com MD <sup>1</sup>, Dr. Stephen 9689 Iles stephen.iles@nhs.net MD <sup>2</sup> and Ms. Leonie 9695 Glinski leonie.glinski@nhs.net <sup>3</sup>. <sup>1</sup> Respiratory, Plymouth Hospitals NHS Trust, Plymouth, United Kingdom, PL6 8DH ; <sup>2</sup> Respiratory, Royal Cornwall NHS Trust, Truro, United Kingdom, TR1 3LJ and <sup>3</sup> Pathology, Royal Cornwall NHS Trust, Truro, United Kingdom, TR1 3LJ .

**Body:** Introduction Liquid based cytology and Conventional cytology are two techniques used in preparation of bronchial washings and brushings. Aims To determine whether Liquid based cytology has better diagnostic rate compared to Conventional cytology when used in preparation of bronchial wash samples in patients with suspected lung cancer. Methods Retrospective observational study of bronchial wash samples sent for cytological analysis with radiological diagnosis of lung carcinoma between April 2009 and June 2012 in Royal Cornwall Hospital, United Kingdom. Results Conventional cytology was used in preparation of bronchial wash between April 2009 - July 2010 and Liquid based cytology between August 2010 – June 2012. 114 patients had their samples processed using Conventional cytology and 126 using Liquid based cytology during this period. 43 (38%) had positive cytology in Conventional group. 68 (54%) had positive cytology in Liquid based group. The calculated p-value is 0.017 (Two sample t test), suggesting statistically significant difference between two groups. The volume of sample did not influence diagnostic yield, as the mean volume of sample in Liquid based group is same (7ml) in both positive and negative groups.

**Conclusion** Our study demonstrates improved diagnostic rate with Liquid based cytology, which might be due to preserving cells, removing excess red cells and eliminating spread artifact.