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**Title:** Evaluation of factors affecting the diagnostic value of transbronchial lung biopsy

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**Body:** Background and Objectives: Transbronchial lung biopsy (TBLB) is the method of choice for diagnosis of pulmonary parenchymal lesions and is used for a wide array of pulmonary diseases. It is also a safe applicable method in ambulatory patients. This study sought to assess the factors affecting the diagnostic value of TBLB. Materials and Methods: This prospective, observational double blind study was conducted on 44 patients presenting to the Bronchoscopy Ward of Masih Daneshvari Hospital in Tehran. Four TBLB specimens were obtained from each patient and characteristics of specimens (size, number of alveoli, diagnostic value and floatability) were recorded. Results: A total of 176 samples were obtained from 44 patients including 21 males (47.7%) and 23 females (52.3%). In general, 37 samples (21%) were diagnostic. Of 57 small samples, 12 (21.2%), of 66 medium size samples, 12 (18.2%), and of 53 large size samples, 13 (24.5%) were diagnostic ( $P=0.700$ ). No significant association was found between the size of specimen and its diagnostic value. Of 84 alveolated samples 31 (36.9%), of 26 non-alveolated samples 5 (19.2%) and of 66 samples with no alveoli one (1.5%) had a diagnostic value ( $P<0.005$ ). Chi-square test failed to find a correlation between the alveolarity of the samples and their diagnostic value ( $P=0.188$ ). Conclusion: Based on the obtained results, number of alveoli present in each specimen was correlated to its

diagnostic value. Size or floatability of specimens had no effect on their quality. Increasing the number of specimens to four can increase the likelihood of reaching a definite diagnosis.