**Sleep disturbances and health-related quality of life in adults with steady-state bronchiectasis**

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**Methods:**

Lung Function*:* Spirometry was performed, in which forced expiratory volume in 1 second (FEV1) and forced vital capacity (FVC) were derived, by using spirometers (QUARK PFT, COSMED Co. Ltd, Italy). The quality control met the recommendations by American Thoracic Society/European Respiratory Society [1]. Data were expressed as absolutes and percentage predicted using reference equations recommended by Zheng et al [2]. At least 3 technically satisfactory measurements were recorded, with the variation between the best two maneuvers of <5% or 150ml in FVC. The maximal values of FVC and FEV1 were reported.

Sputum bacteriology*:* Sputum culture reports from medical records in the preceding year were meticulously extracted. Following chest physiotherapy, spontaneous sputum samples before 10:00am containing less than 10 squamous cells and more than 25 leukocytes under microscope (magnification: \*100) were collected and sent for bacteriology assay within 2 hours at 3-month intervals. Determination of Pseudomonas aeruginosa (P. aeruginosa) colonization, defined by an identical isolation on two or more occasions, at least 3 months apart within a 1-year period, was assessed in conjunction with previously available results.

**REFERENCE**

1. Miller MR, Hankinson J, Brusasco V, Burgos F, Casaburi R et al (2005) Standardisation of spirometry. *Eur Respir J.* 26(2): 319-38.

2. Zheng J, Zhong N (2002) Normative values of pulmonary function testing in Chinese adults. *Chin Med J (Engl).* 115(1): 50-4.