INTRODUCTION

The MiniBox® system is based on a novel technique for the measurement of lung volumes. The system is designed to measure lung volumes without the utilization of gases or a Plethysmographic cabin. The system sits on a desk and allows a rapid and user-friendly measurement.

The MiniBox technique has been validated in a prospective multi-center study on over 134 subjects, in Israel. The purpose of this study, as well as others to come, is to test the accuracy of the measurement on different populations, in different geographies, against several Body Plethysmography devices.

METHOD

This non-sponsored study was held at the Specialist Medical Centre, Verona, Italy and included 134 subjects. Each of the patients enrolled was measured at the same day in random order on the MiniBox and the reference Body Plethysmography device, manufactured by MGC Diagnostics, USA. Simultaneously, time was recorded to measure reproducible lung volume data and DLCO values.

DISCUSSION

Our results show that TLC_MiniBox is remarkably accurate compared to TLC_Pleth across the entire population studied. Among our prospective cohort of 134 subjects, who had varying severities of obstructive and restrictive diseases, TLC_MiniBox correlated well with TLC_Pleth (adjusted r² = 0.92).

Furthermore, the study showed a CV (Coefficient of Variation) of 7.9%. Time to measure reproducible lung volumes and DLCO was 13.3 and 5.6 minutes on the MGC device vs. 6.9 and 1.4 minutes with the MiniBox.

Study conducted at the Specialist Medical Centre, Verona, Italy