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Room A2-3 Session 237 10:45-12:45

PN Poster Discussion : Respiratory function: quality and new technologies

P1994

Validation of a portable lung volume testing system

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Aim: We wanted to validate the ndd Easy One Pro Lab Plus for static lung volumes using multiple breath nitrogen washout (MBW) technique, against standard helium dilution (HD) equipment.

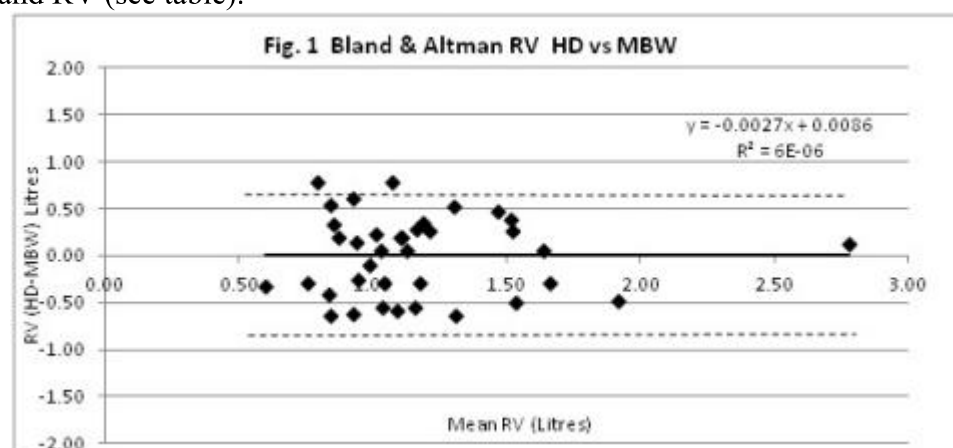
Method: We tested healthy volunteers (n=16) and routine respiratory patients (n=22) [Mean (SD) Age (years) 44.1 (17.8); Height (m) 1.66 (0.10); M:F 12:26] by both MBW (Easy One Pro Lab Plus, ndd, Zurich, Switzerland) and HD (Jaeger Masterscreen PFT, Hochburg, Germany) and compared Functional Residual Capacity (FRC), Residual Volume (RV) and Total Lung Capacity (TLC) using student's paired t-test and Bland & Altman (B&A) analysis.

Results: There was no significant difference in TLC, FRC or RV between MBW and HD (Table 1).

Lung Volumes measured by MBW and HD

Mean (sd)	MBW (Easy One Pro)	HD (Masterscreen)	Difference (MBW-HD)
TLC (L)	5.36 (1.33)	5.50 (1.34)	0.14 (0.35) NS
FRC (L)	2.13 (0.74)	2.30 (0.68)	0.25 (0.41) NS
RV (L)	1.17 (0.45)	1.16 (0.45)	0.01 (0.43) NS

NS = non-significant difference (paired student's t-test) The B&A analysis (Fig 1.) shows that the difference in RV was homoscedastic and not clinically significant. This was similar in FRC and RV (see table).



Conclusion: There was no clinically significant difference (all <0.50 Litres) in FRC, RV or TLC when measured by MBW or HD methods. Sub-analysis of patients and healthy volunteers showed similar patterns (not shown).