European Respiratory Society
Annual Congress 2013

Abstract Number: 4628

Publication Number: 3494

Abstract Group: 4.1. Clinical respiratory physiology, exercise and functional imaging

Keyword 1: Lung function testing **Keyword 2:** Gas exchange **Keyword 3:** No keyword

Title: Impact of the choice of CO and NO conductance values on the interpretation of CO and NO diffusion capacities

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Body: Diffusion tests with NO and CO give smaller membrane conductance values (Dm) than morphometry. This discrepancy is likely due to the uncertainty surrounding the estimates for θ_{NO} and θ_{CO}. A method was devised to estimate θ_{NO} and θ_{CO} in healthy subjects by measuring NO and CO transfer with either 21 or 15% FIO_2 making the assumption that the latter mixture would not change Dm and Vc. Vc and Dm/Vc were calculated using the usual multi step oxygenation method and the NO/CO method. From the identity of these 2 estimations θ_{NO} and θ_{CO} values could be derived. 10 subjects aged between 20 and 68 years performed the measures (Hyper'compact Medisoft Dinant, Be). They breathed either air or a mixture with 15% O_2 and performed then the single breath maneuver with the usual tracers. FEO_2 was measured and $PcapO_2$ was calculated. The target finite value for θ_{NO} of 4.5 $(mmHg\ min)^{-1}$ was that recommended by Borland et al. Seven θ_{CO} vs PO_2 equations were tested, among them a mix of Holland and Forster equations (HF). With (1) and (2) corresponding to 21% and 15% FI O_2 respectively: $\Theta_N o = 1.97/[1/\Theta co_1 - (1/\Theta co_1 - 1/\Theta co_2)*(1/TL_{CO(1,2)} - 1.97/ TL_{NO(1,2)})/(1/TL_{CO1} - 1/TL_{CO2})]$ None Θ_{NO} value was compatible with an infinite or high θ_{NO} value. The best compromise was obtained with the HF equation ($1/\theta_{CO} = 1.19 + 0.0053\ PO_2$), $\Theta_N o = 2.1 \pm 5.3\ (mmHg\ min)^{-1}$. The target value of 4.5 was within the confidence interval (t =2). Dm would be twofold the previous value in the range of the morphometric values. Adopting these results would change the interpretation of NO and CO transfer, DL_{NO} would depend for a half of the membrane and blood components of the transfer, DL_{CO} would depend for 80% of the blood component.