EFFECT OF TREATMENT ON RECOVERY OF FEV_1 TO BASELINE AFTER A MANNITOL CHALLENGE: A PHASE 3 STUDY

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We analysed a subset of data on 290 subjects with asthma symptoms who recorded a 15% fall in FEV_1 in response to inhaled mannitol as part of a study to investigate the safety and efficacy of mannitol as a bronchial provocation test. Treatment was being taken by 277. At least 12 hr (ICS and CT) or 8 hr (SABA) elapsed between the last dose and the mannitol challenge. We wanted to know if the recovery of FEV_1 after challenge was different between treatments. A standard dose of salbutamol (200 mcg) was given after challenge, and the FEV_1 was measured at 5, 10 & 15 min. If FEV_1 had not returned to 95% of baseline, a further 200 mcg of salbutamol was given and the FEV_1 measured every 5 min for a further 15 min. The % fall in FEV_1 was similar for all groups after challenge with mannitol.

Results:

* Treatment n	ßeta $_2$ only A n = 74	CT ± SABA B n = 131	ICS ±SABA C n = 72	P value B vs C
Mean baseline FEV_1 L Median	2.99 (2.81)	2.63 (2.56)	2.62 (2.51)	NS
Mean Max % fall in FEV_1 (range)	21.8 (15.4-39.4)	21.1 (15.0-44.6)	20.6 (15.1-45.5)	NS
Geo M (95%CI) PD_{15} mg	91 (69,120)	115 (93,138)	129 (96,174)	NS
Mean recovery (mins) (range)	17.8 (6-40)	20.9 (6-65)	18.0 (7-38)	NS
No. subjects requiring 2^{nd} dose salbutamol (%)	5 (6.8)	28 (21.4)	6 (8.3)	p = 0.02

* SABA = short-acting $beta_2$ agonist; CT = Long acting $beta_2$ agonist + inhaled corticosteroid (ICS)

Conclusion: A significantly higher percentage of the group being treated with the combination of a long acting beta $_2$ agonist and inhaled corticosteroids required a 2nd dose of salbutamol for FEV_1 to recover to 95% of baseline after challenge.

Supported by Pharmaxis Ltd Frenchs Forest NSW 2086