

## **FULLY AUTOMATED VOLUMETRIC MEASUREMENT OF MALIGNANT PLEURAL MESOTHELIOMA BY DEEP LEARNING AI: VALIDATION AND COMPARISON WITH MODIFIED RECIST RESPONSE CRITERIA**

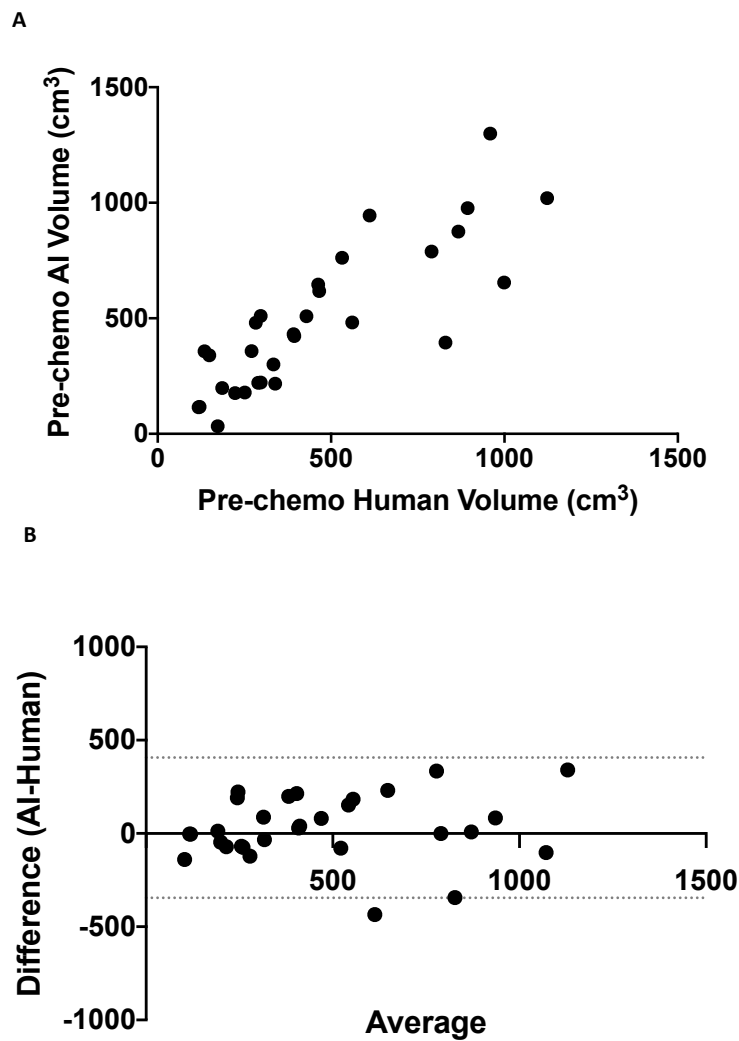
### **ONLINE ONLY SUPPLEMENT**

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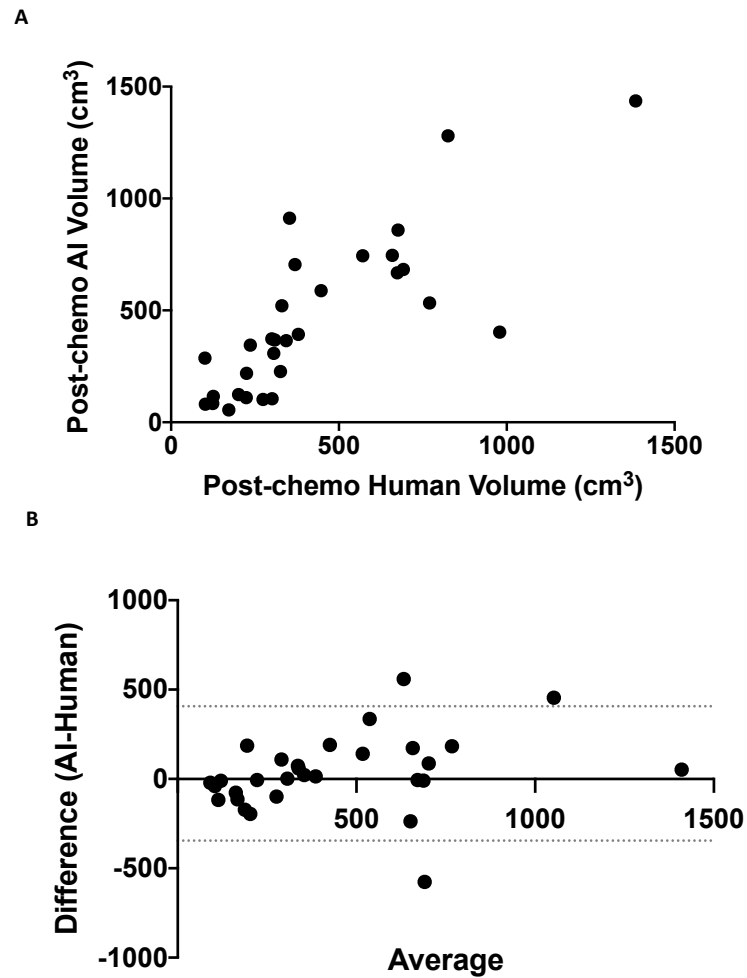
**Supplementary Figure 1**

Median pre-chemotherapy human and AI volumes (n=30) were not significantly different (366 cm<sup>3</sup> [244 -656] v 427 cm<sup>3</sup> [220-682], p=0.67). Panel A shows correlation between human and AI volumes (r=0.86, p<0.0001). Panel B shows Bland-Altman agreement, with a mean bias of +29 cm<sup>3</sup> and 95% limits (-312.9 to 371.1 cm<sup>3</sup>).



**Supplementary Figure 2**

Median post-chemotherapy human and AI- volumes (n=30) were not significantly different ( $328 \text{ cm}^3$  [225-63] v  $371 \text{ cm}^3$  [122-689],  $p=0.84$ ). Panel A shows correlation between human and AI volumes ( $r=0.86$ ,  $p<0.0001$ ). Panel B shows Bland-Altman agreement, with a mean bias of  $+32 \text{ cm}^3$  and 95% limits of agreement ( $-381$  to  $445 \text{ cm}^3$ ).



### Supplementary Figure 3

Overall survival (days) was calculated for cases in the validation set from the date of pre-chemotherapy CT scan to death from any cause. Survival analysis was by Kaplan-Meier methodology. Panels A and B report the statistically significant association between higher baseline (pre-chemotherapy) tumour volume and OS, dichotomised around the median volume measured by human (Panel A) and AI (Panel B) segmentation. Panels C-D report non-significant trends towards shorter OS in cases with PD v non-PD defined by human volume criteria (271 v 375 days, n=26), AI volume criteria (271 v 375 days, n=26) and mRECIST criteria (293 v 399 days, n=26), respectively.

