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

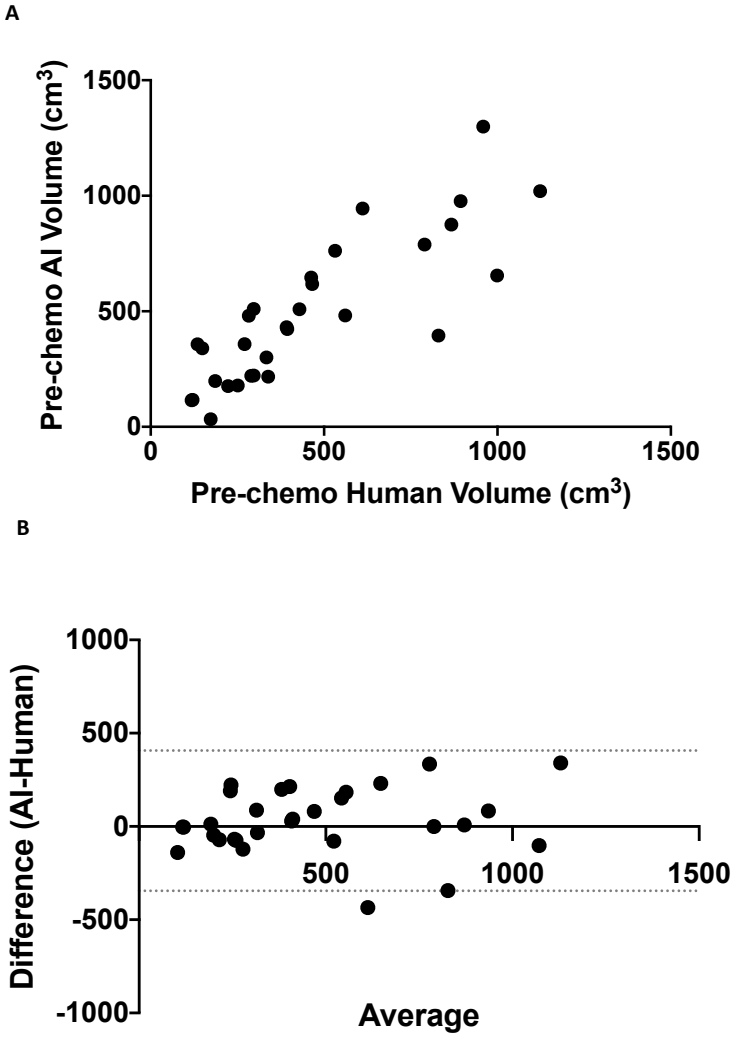
ONLINE ONLY SUPPLEMENT

Contents

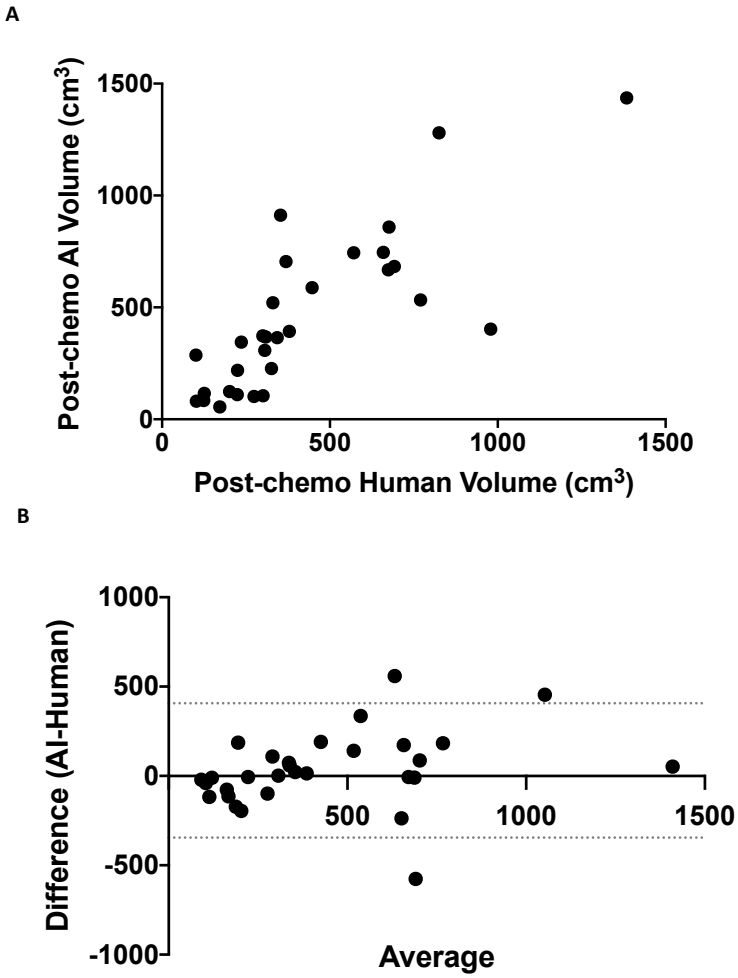
Suppl. Figure 1	Pre-chemotherapy Human and AI volumes	Page 1
Suppl. Figure 2	Post-chemotherapy Human and AI volumes	Page 2
Suppl. Figure 3	Survival Analyses	Page 3

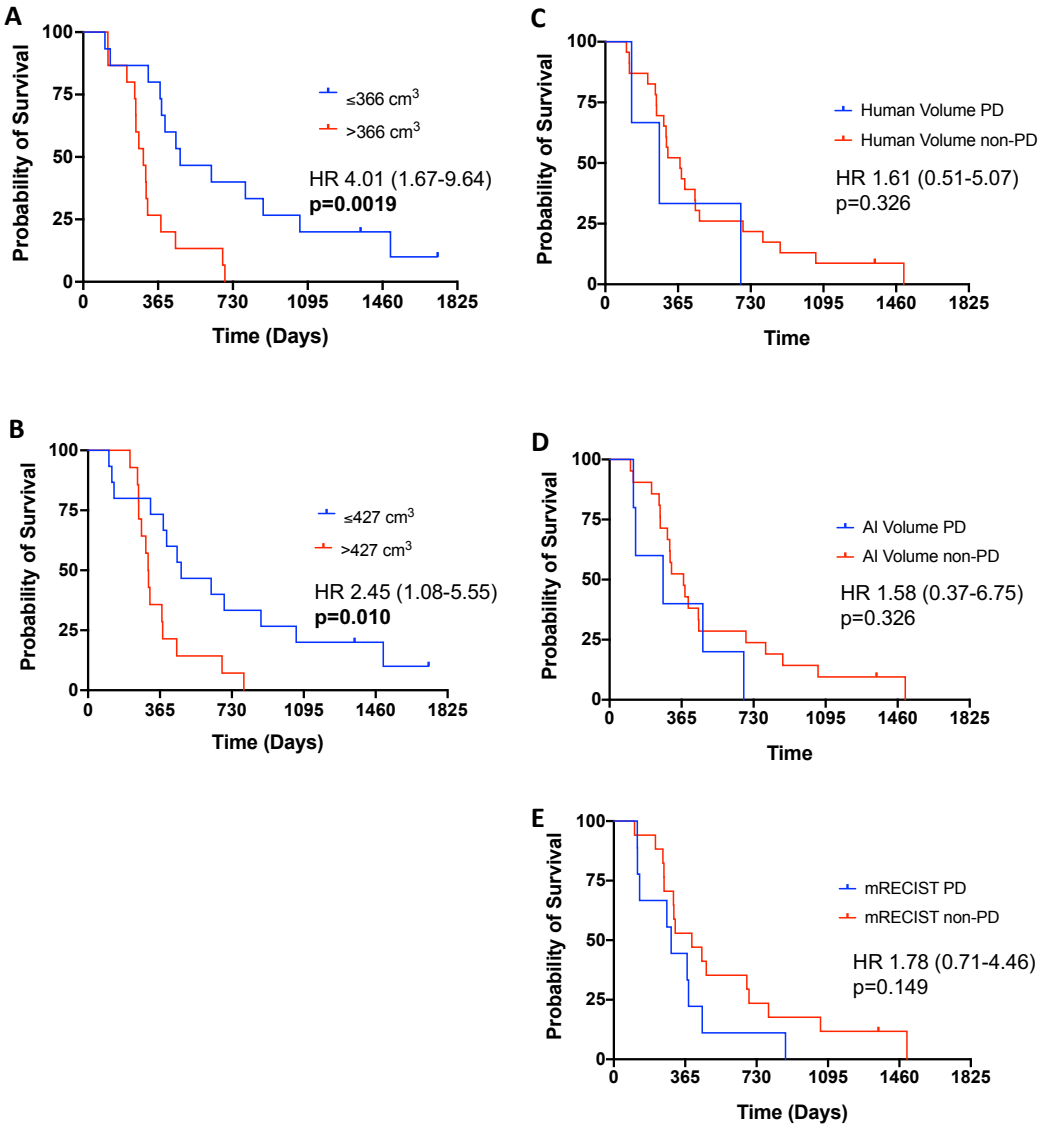
Supplementary Figure 1

Median pre-chemotherapy human and AI volumes (n=30) were not significantly different (366 cm^3 [244 -656] v 427 cm^3 [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^3 and 95% limits (-312.9 to 371.1 cm^3).



Supplementary Figure 2
Median post-chemotherapy human and AI- volumes (n=30) were not significantly different (328 cm^3 [225-63] v 371cm^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 cm^3 and 95% limits of agreement (-381 to 445 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.