

Inspiratory Effort Assessment by Esophageal Manometry Early Predicts Noninvasive

Ventilation Outcome in *de novo* Respiratory Failure: A Pilot Study

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ONLINE DATA SUPPLEMENT

Online Supplementary Material

Figure E1. Time course assessment through ANOVA analysis of ΔP_{es} (panel A), ΔP_L (panel B), and $\Delta P_{es}/\Delta P_L$ (panel C) for patients who failed and who were successful in the 24-hour NIV trial.

Figure E2. Time course assessment through ANOVA analysis of Vte/kg of PBW (panel A), VE (panel B), and Vte/ ΔP_L (panel C) for patients who failed and who were successful in the 24-hour NIV trial.

Figure E3. Time course assessment through ANOVA analysis of RR (panel A), PaO₂/FiO₂ ratio (panel B), and HACOR score (panel C) for patients who failed and who were successful in the 24-hour NIV trial.

Figure E4. Correlation between ΔP_{es} and Vte/ ΔP_L values on admission ($r=-0.77$, $p<0.0001$).

Figure E5. Correlation between ΔP_{es} and PaO₂/FiO₂ ratio (panel A, $r=-0.01$, $p=0.9$), RR (panel B, $r=0.23$, $p=0.2$), HACOR score (panel C, $r=0.05$, $p=0.8$), and Vte/kg of PBW (panel D, $r=-0.05$, $p=0.8$) on admission.

Figure E6. Correlation assessed through Pearson's correlation coefficient between ΔP_{es} changes 2 hours after NIV start and radiographic changes on chest X-ray assessed at 24 hours. Colored panels correspond to categories of radiographic change as assessed by the radiologist (from left to right: relevant worsening, worsening, mild worsening, unmodified, mild improvement, improvement, relevant improvement).

Figure E7. Probability to die at 30 days from admission according to the reduction of ΔP_{es} within the first 2 hours after NIV start.

Table E1. Sensitivity and specificity table derived from ROC analysis of ΔP_{es} changes after 2 hours of NIV on NIV failure.

Table E2. Sensitivity and specificity table derived from ROC analysis of baseline $Vte/\Delta P_L$ on NIV failure.

Figure E1

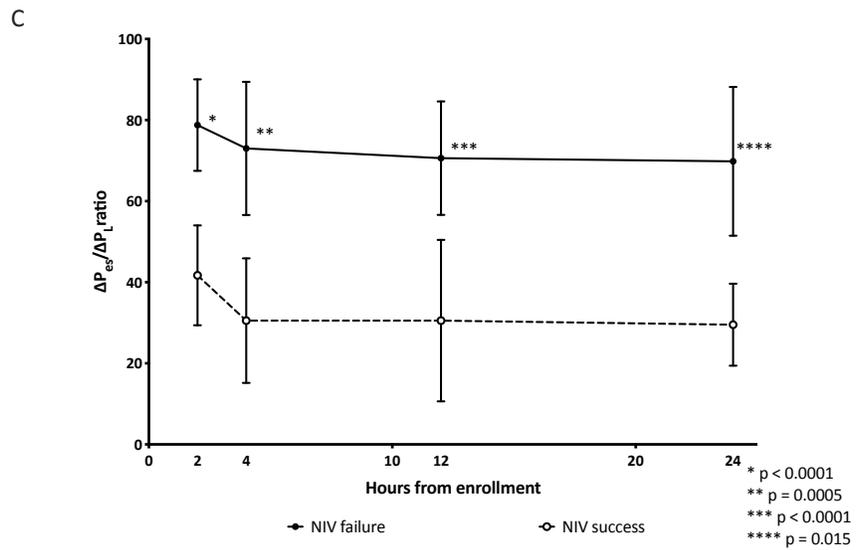
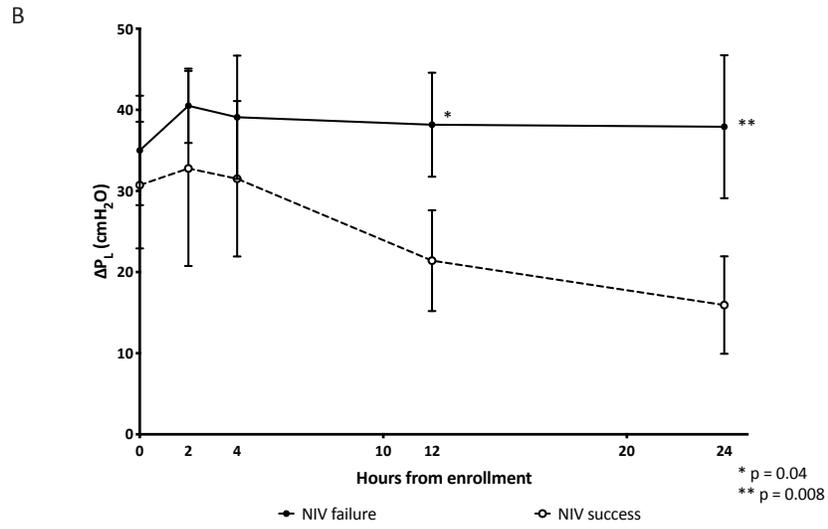
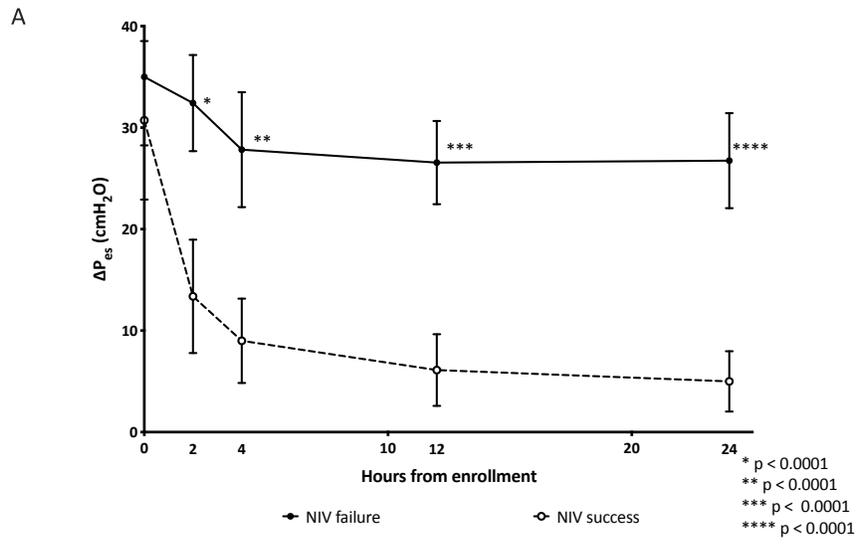


Figure E2

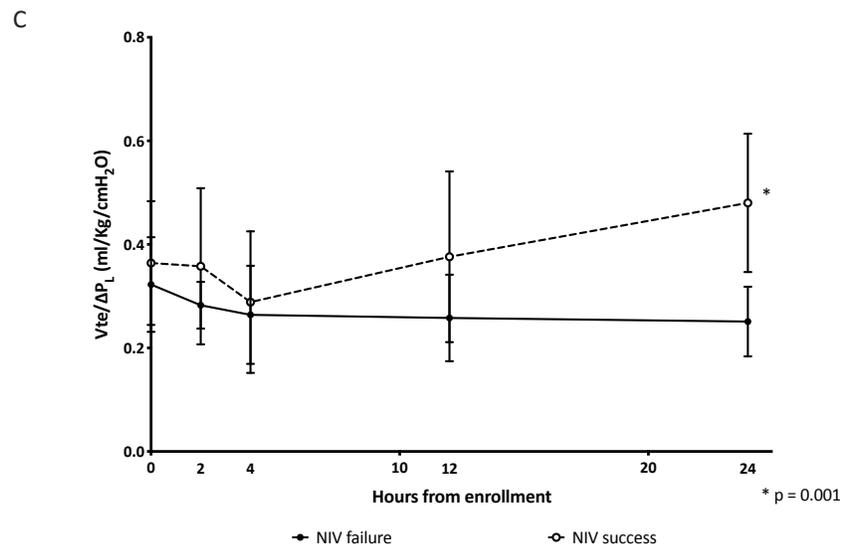
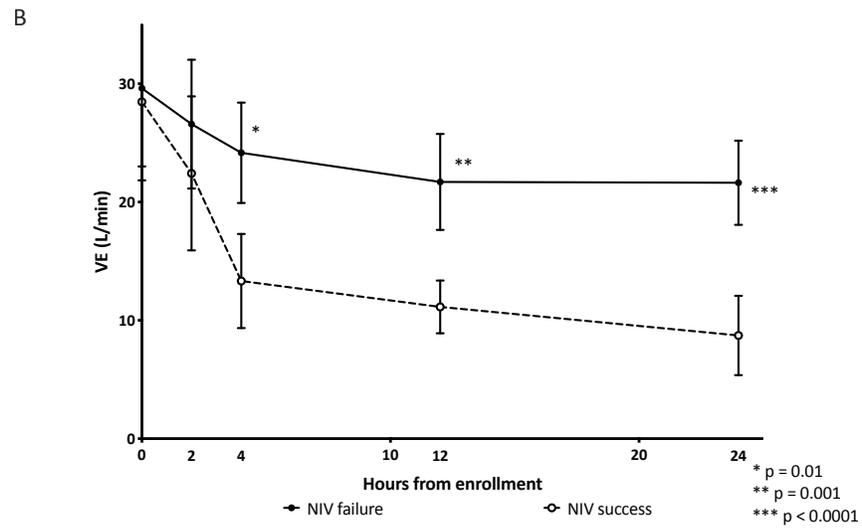
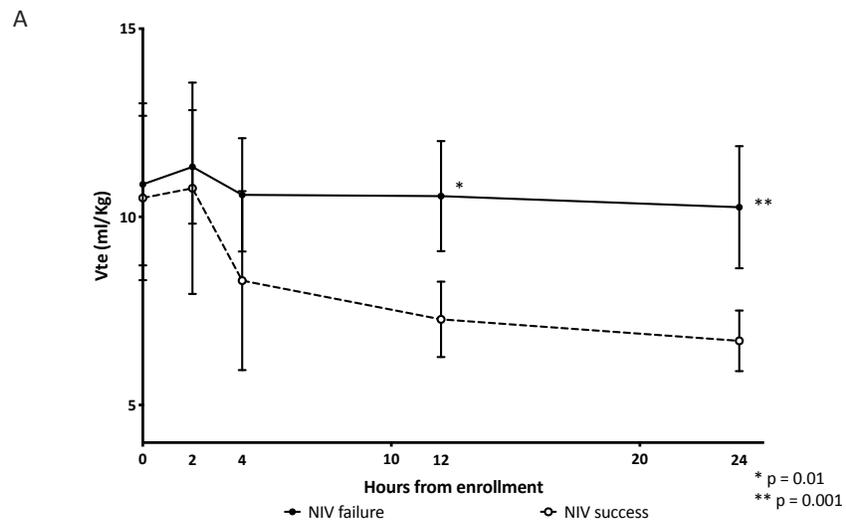


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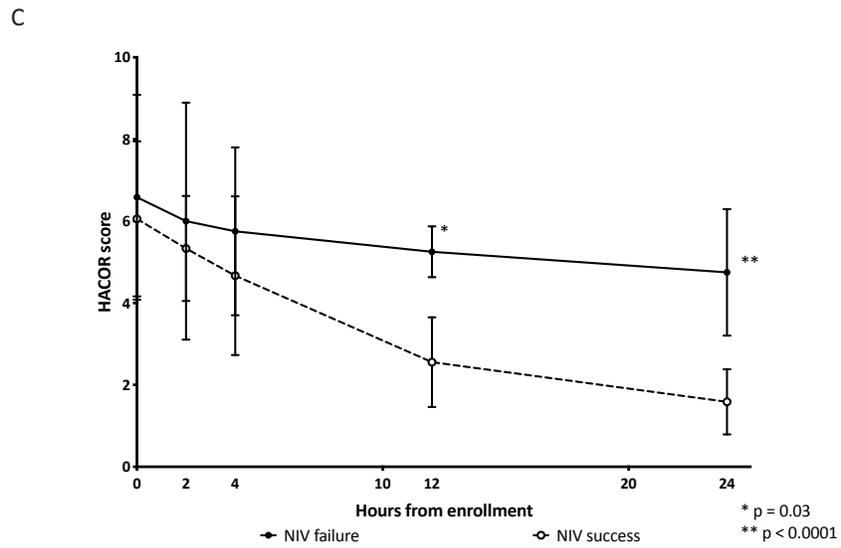
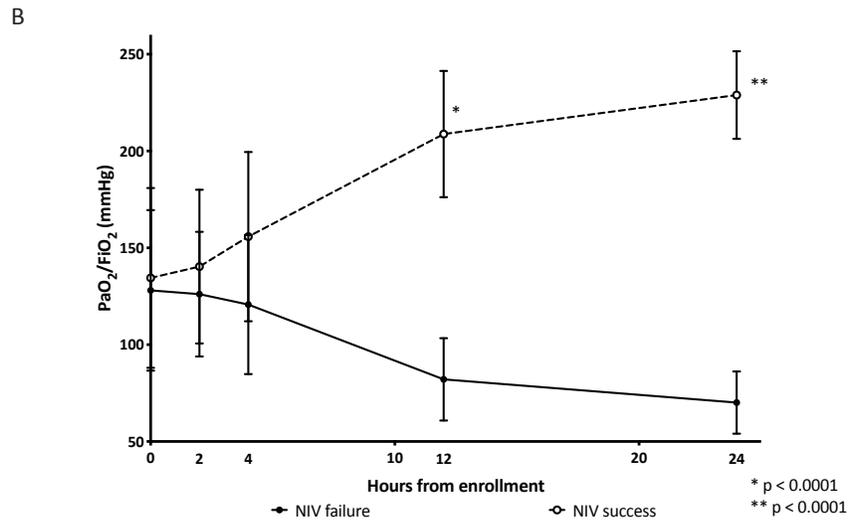
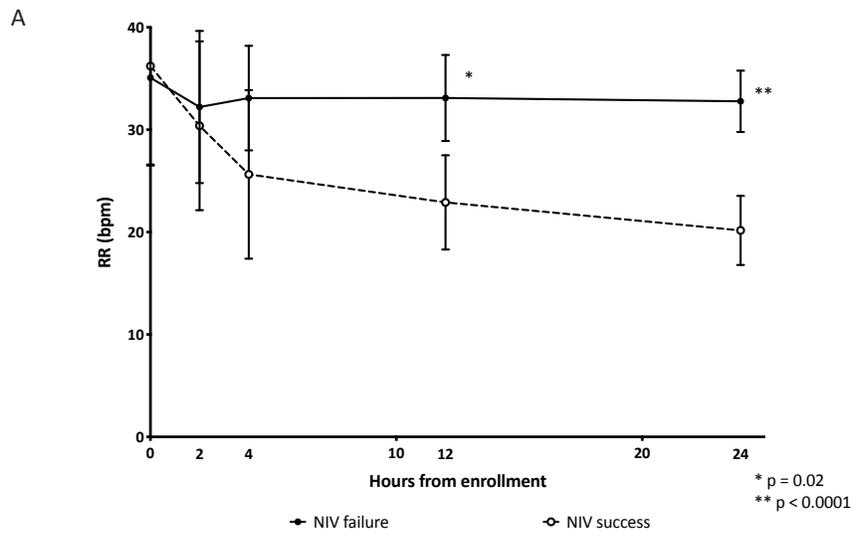


Figure E4

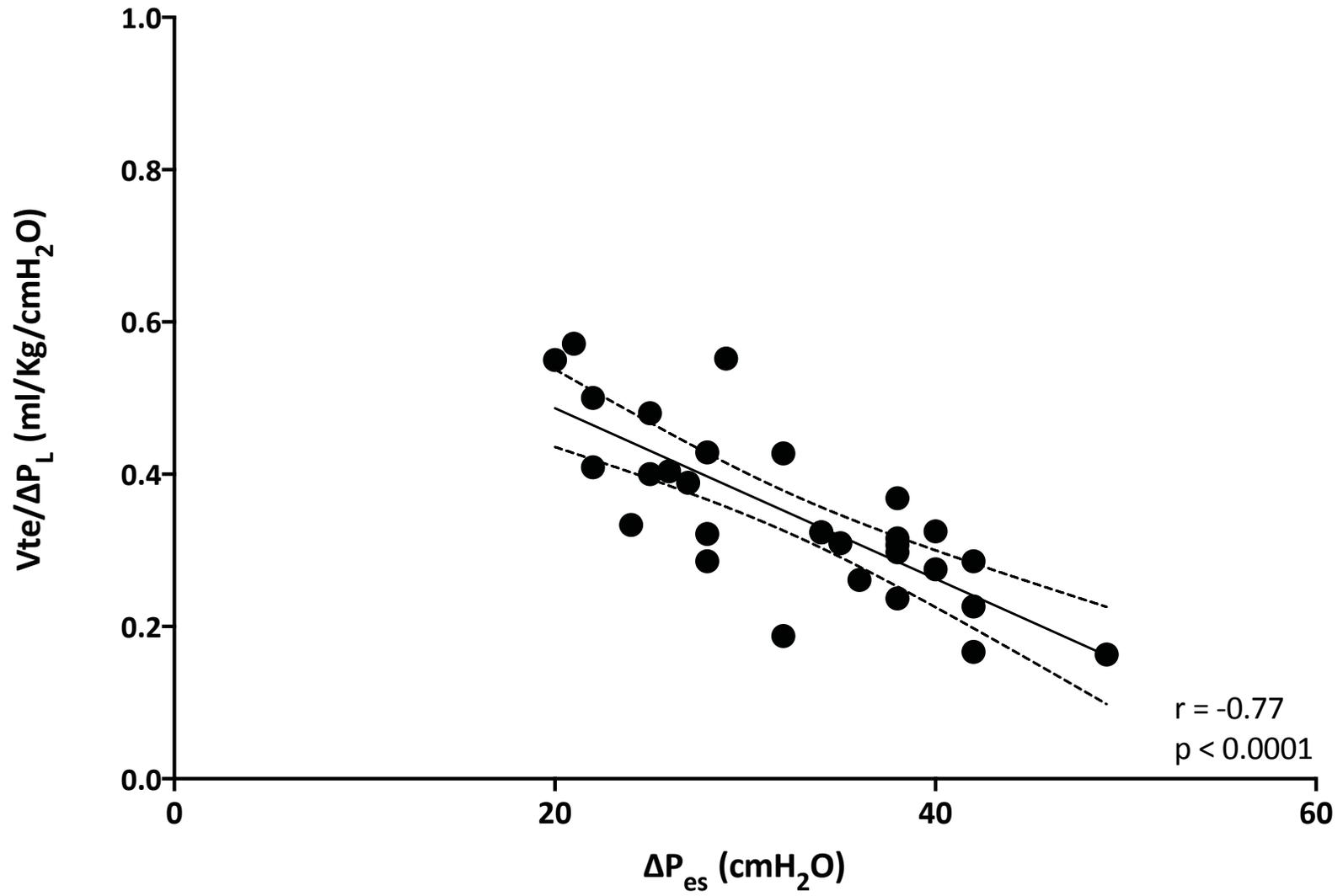


Figure E5

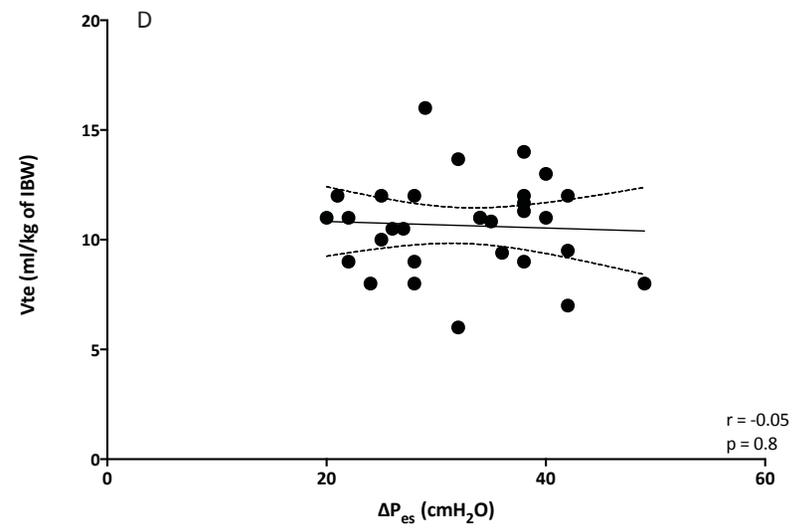
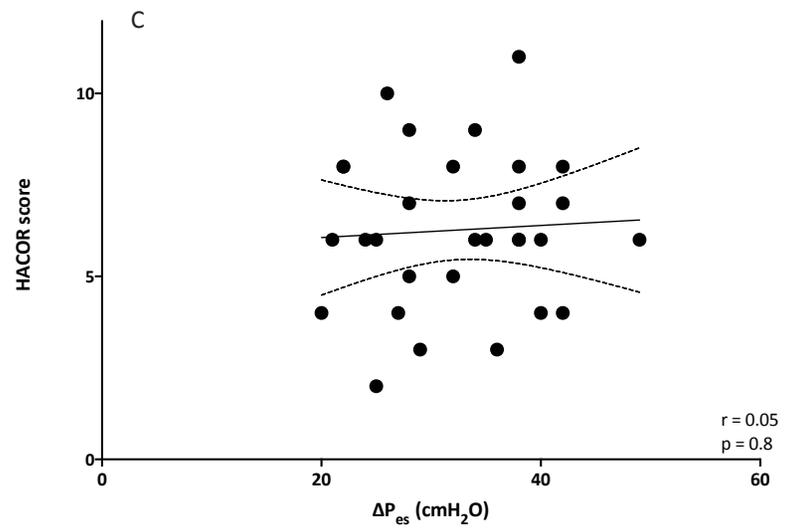
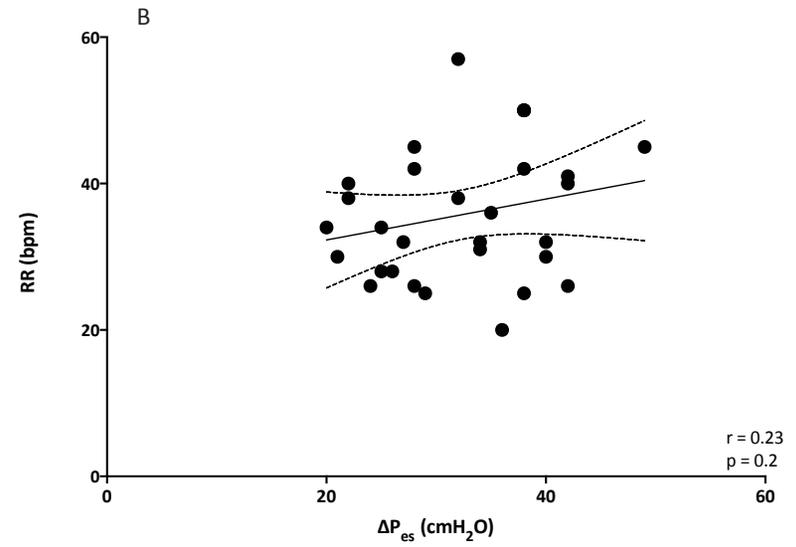
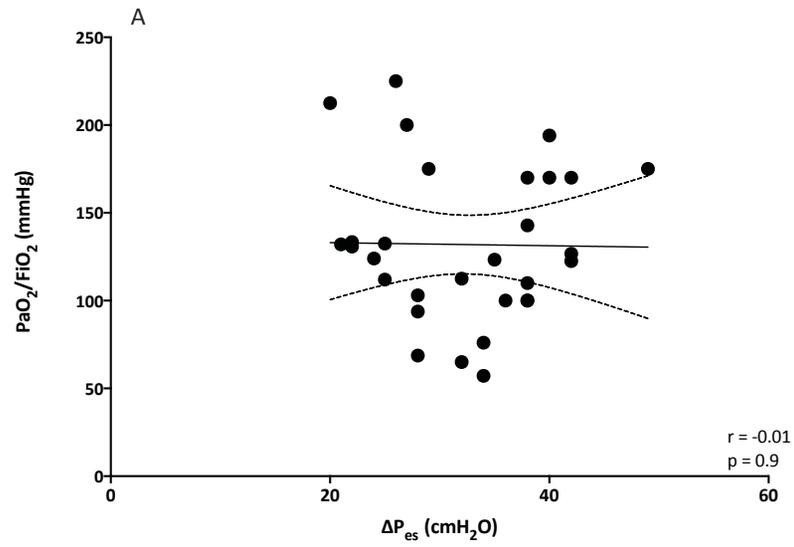


Figure E6

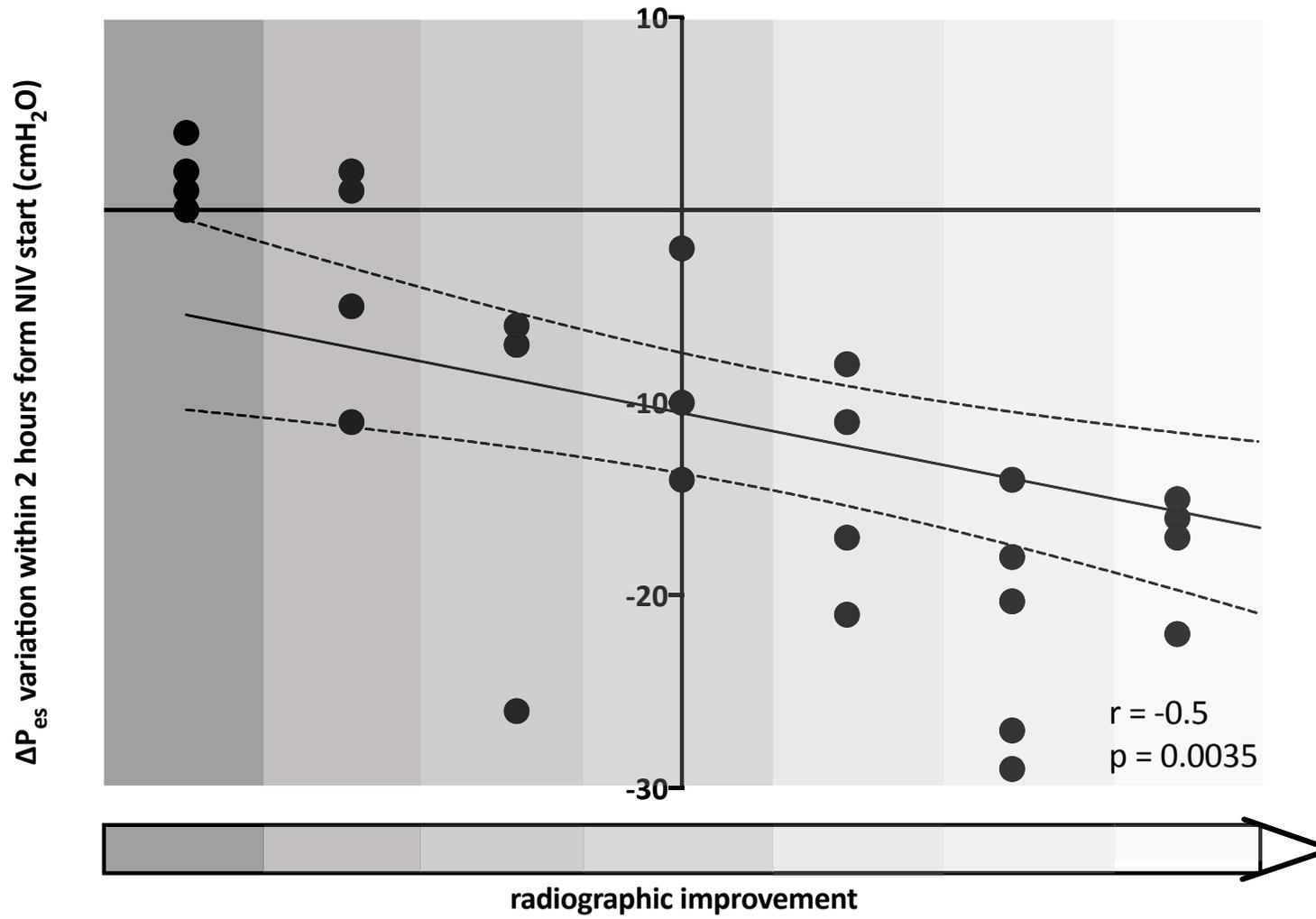
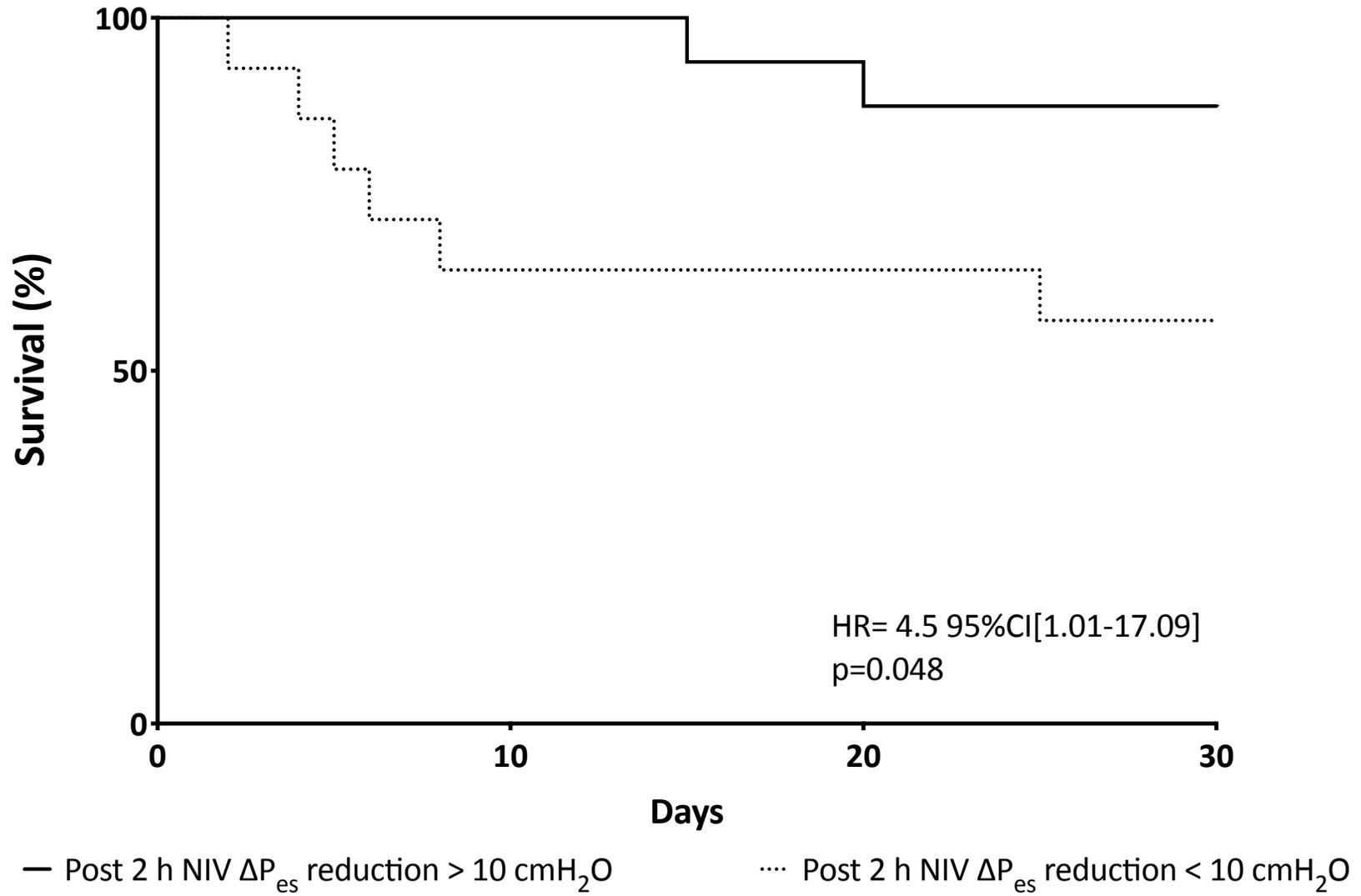


Figure E7



	<i>Sensitivity%</i>	<i>95% CI</i>	<i>Specificity%</i>	<i>95% CI</i>	<i>Likelihood ratio</i>
> -28.00	100,0	75,75% to 100,0%	5,556	0,2850% to 25,76%	1,059
> -26.50	100,0	75,75% to 100,0%	11,11	1,974% to 32,80%	1,125
> -24.00	100,0	75,75% to 100,0%	16,67	5,837% to 39,22%	1,200
> -21.50	100,0	75,75% to 100,0%	27,78	12,50% to 50,87%	1,385
> -20.65	100,0	75,75% to 100,0%	33,33	16,28% to 56,25%	1,500
> -19.15	100,0	75,75% to 100,0%	38,89	20,31% to 61,38%	1,636
> -17.50	100,0	75,75% to 100,0%	44,44	24,56% to 66,28%	1,800
> -16.50	100,0	75,75% to 100,0%	55,56	33,72% to 75,44%	2,250
> -15.50	100,0	75,75% to 100,0%	61,11	38,62% to 79,69%	2,571
> -14.50	100,0	75,75% to 100,0%	66,67	43,75% to 83,72%	3,000
> -12.50	100,0	75,75% to 100,0%	77,78	54,79% to 91,00%	4,500
> -10.00	91,67	64,61% to 99,57%	83,33	60,78% to 94,16%	5,500
> -9.000	83,33	55,20% to 97,04%	83,33	60,78% to 94,16%	5,000
> -7.500	83,33	55,20% to 97,04%	94,44	74,24% to 99,72%	15,00
> -6.500	75,00	46,77% to 91,11%	100,0	82,41% to 100,0%	
> -5.500	66,67	39,06% to 86,19%	100,0	82,41% to 100,0%	
> -3.500	58,33	31,95% to 80,67%	100,0	82,41% to 100,0%	
> -1.000	50,00	25,38% to 74,62%	100,0	82,41% to 100,0%	
> 0.5000	41,67	19,33% to 68,05%	100,0	82,41% to 100,0%	
> 1.500	25,00	8,894% to 53,23%	100,0	82,41% to 100,0%	
> 3.000	8,333	0,4274% to 35,39%	100,0	82,41% to 100,0%	

	<i>Sensitivity%</i>	<i>"95% CI"</i>	<i>Specificity%</i>	<i>"95% CI"</i>	<i>"Likelihood ratio"</i>
<i>"< 0.1650"</i>	0,000	"0.000% to 24.25%"	94,44	"74.24% to 99.72%"	0,000
<i>"< 0.1771"</i>	8,333	"0.4274% to 35.39%"	94,44	"74.24% to 99.72%"	1,500
<i>"< 0.2068"</i>	8,333	"0.4274% to 35.39%"	88,89	"67.20% to 98.03%"	0,7500
<i>"< 0.2315"</i>	16,67	"2.961% to 44.80%"	88,89	"67.20% to 98.03%"	1,500
<i>"< 0.2490"</i>	16,67	"2.961% to 44.80%"	83,33	"60.78% to 94.16%"	1,000
<i>"< 0.2681"</i>	25,00	"8.894% to 53.23%"	83,33	"60.78% to 94.16%"	1,500
<i>"< 0.2804"</i>	25,00	"8.894% to 53.23%"	77,78	"54.79% to 91.00%"	1,125
<i>"< 0.2915"</i>	41,67	"19.33% to 68.05%"	77,78	"54.79% to 91.00%"	1,875
<i>"< 0.3022"</i>	50,00	"25.38% to 74.62%"	77,78	"54.79% to 91.00%"	2,250
<i>"< 0.3083"</i>	50,00	"25.38% to 74.62%"	72,22	"49.13% to 87.50%"	1,800
<i>"< 0.3126"</i>	50,00	"25.38% to 74.62%"	66,67	"43.75% to 83.72%"	1,500
<i>"< 0.3186"</i>	50,00	"25.38% to 74.62%"	61,11	"38.62% to 79.69%"	1,286
<i>"< 0.3225"</i>	50,00	"25.38% to 74.62%"	55,56	"33.72% to 75.44%"	1,125
<i>"< 0.3243"</i>	58,33	"31.95% to 80.67%"	50,00	"29.03% to 70.97%"	1,167
<i>"< 0.3292"</i>	66,67	"39.06% to 86.19%"	50,00	"29.03% to 70.97%"	1,333
<i>"< 0.3509"</i>	66,67	"39.06% to 86.19%"	44,44	"24.56% to 66.28%"	1,200
<i>"< 0.3787"</i>	75,00	"46.77% to 91.11%"	44,44	"24.56% to 66.28%"	1,350
<i>"< 0.3944"</i>	75,00	"46.77% to 91.11%"	38,89	"20.31% to 61.38%"	1,227
<i>"< 0.4019"</i>	75,00	"46.77% to 91.11%"	33,33	"16.28% to 56.25%"	1,125
<i>"< 0.4065"</i>	83,33	"55.20% to 97.04%"	33,33	"16.28% to 56.25%"	1,250
<i>"< 0.4181"</i>	83,33	"55.20% to 97.04%"	27,78	"12.50% to 50.87%"	1,154