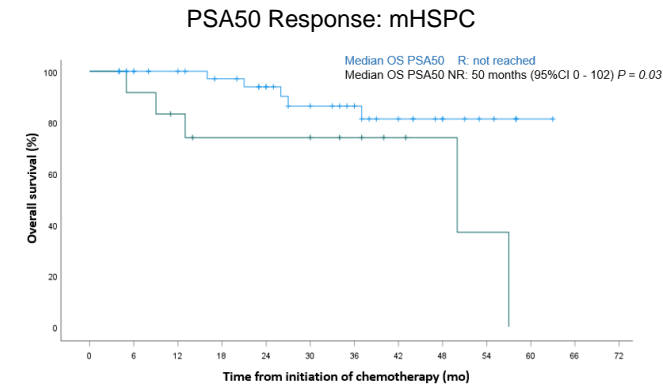
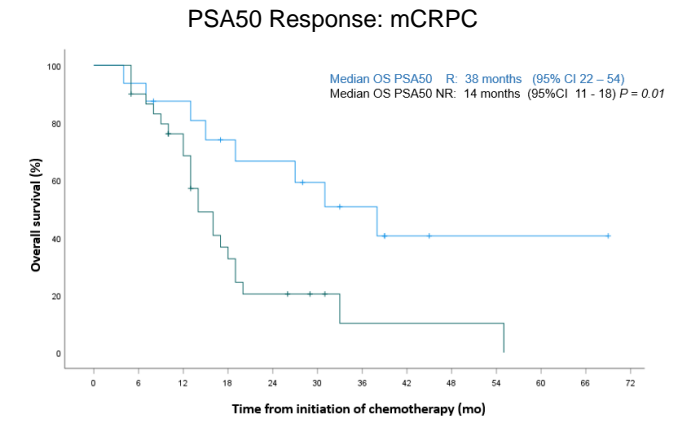


Supplemental figure 1: Kaplan Meier estimates of overall survival by PSA reduction $\geq 50\%$, adapted Prostate Cancer Working Group Criteria 3 (aPCWG3), adapted Positron Emission Tomography Response Criteria in Solid Tumors (aPERCIST) and PSMA PET Progression (PPP) criteria, stratified by castration status.



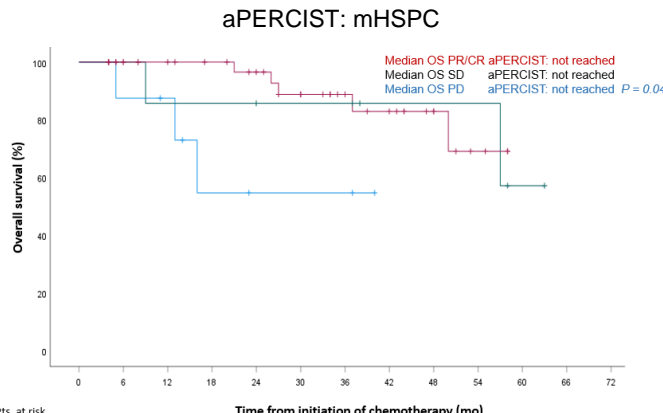
Pts. at risk

| | | | | | | | | | | | | | |
|-----------|----|----|----|----|----|----|----|----|---|---|---|---|---|
| PSA 50 NR | 12 | 11 | 9 | 7 | 7 | 7 | 5 | 3 | 2 | 1 | - | - | - |
| PSA50 R | 45 | 40 | 36 | 32 | 28 | 22 | 18 | 13 | 9 | 5 | 1 | - | - |



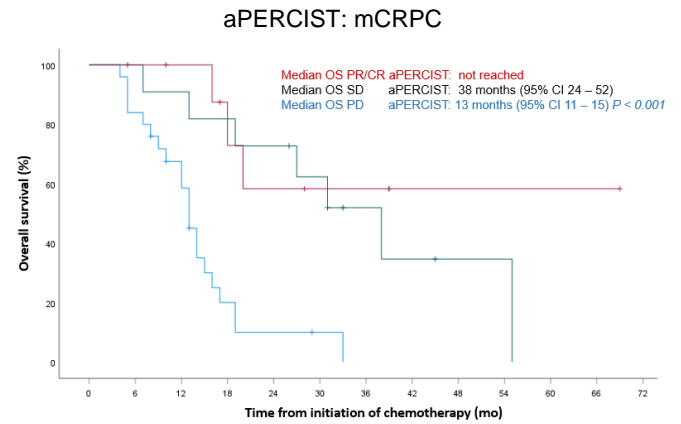
Pts. at risk

| | | | | | | | | | | | | | |
|-----------|----|----|----|----|---|---|---|---|---|---|---|---|---|
| PSA 50 NR | 30 | 26 | 20 | 9 | 5 | 3 | 1 | 1 | 1 | 1 | - | - | - |
| PSA50 R | 16 | 15 | 13 | 10 | 9 | 7 | 5 | 2 | 1 | 1 | 1 | 1 | - |



Pts. at risk

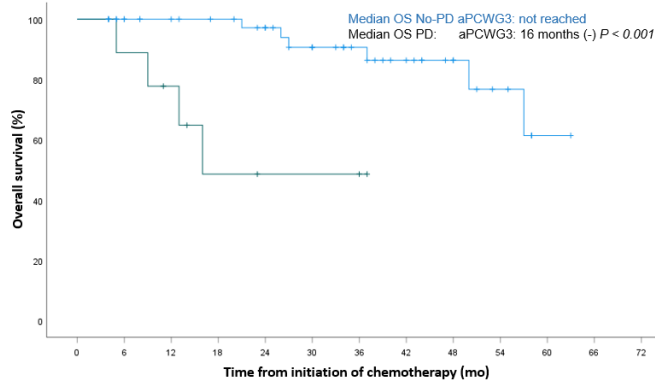
| | | | | | | | | | | | | | |
|-------|----|----|----|----|----|----|----|----|---|---|---|---|---|
| PD | 8 | 7 | 6 | 3 | 2 | 2 | 2 | - | - | - | - | - | - |
| SD | 7 | 7 | 6 | 6 | 6 | 5 | 5 | 3 | 3 | 3 | 1 | - | - |
| PR/CR | 42 | 37 | 33 | 30 | 27 | 22 | 16 | 13 | 8 | 3 | - | - | - |



Pts. at risk

| | | | | | | | | | | | | | |
|-------|----|----|----|---|---|---|---|---|---|---|---|---|---|
| PD | 25 | 21 | 15 | 4 | 2 | 1 | - | - | - | - | - | - | - |
| SD | 11 | 11 | 10 | 9 | 8 | 6 | 3 | 2 | 1 | 1 | - | - | - |
| PR/CR | 10 | 9 | 8 | 6 | 4 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | - |

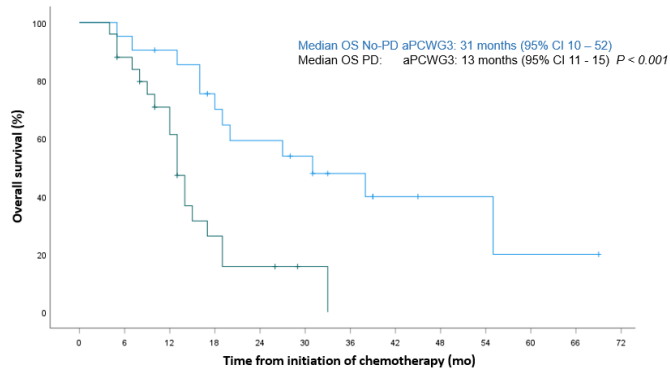
aPCWG3: mHSPC



Pts. at risk

| | | | | | | | | | | | | | |
|-------|----|----|----|----|----|----|----|----|----|---|---|----|----|
| PD | 9 | 8 | 6 | 3 | 2 | 2 | 2 | - | - | - | - | - | - |
| No-PD | 48 | 43 | 39 | 36 | 33 | 27 | 21 | 16 | 11 | 6 | 1 | 48 | 43 |

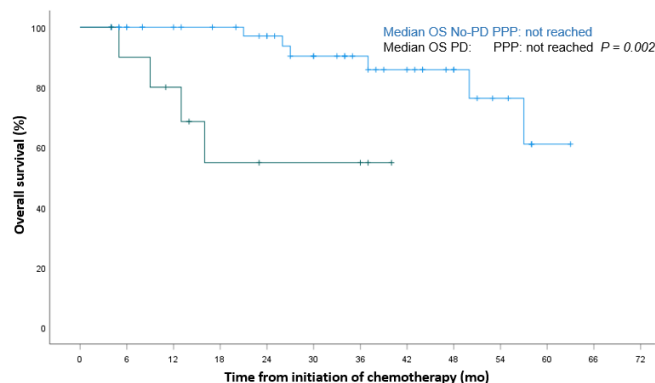
aPCWG3: mCRPC



Pts. at risk

| | | | | | | | | | | | | | |
|-------|----|----|----|----|----|---|---|---|---|---|---|---|---|
| PD | 25 | 21 | 15 | 5 | 3 | 1 | - | - | - | - | - | - | - |
| No-PD | 21 | 20 | 18 | 14 | 11 | 9 | 6 | 3 | 2 | 2 | 1 | 1 | - |

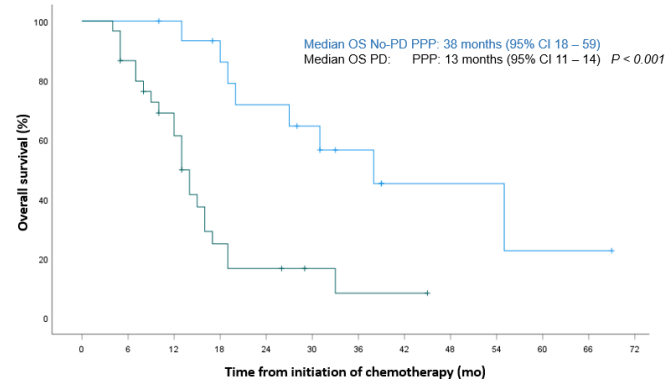
PPP: mHSPC



Pts. at risk

| | | | | | | | | | | | | | |
|-------|----|----|----|----|----|----|----|----|----|---|---|---|---|
| PD | 11 | 9 | 7 | 4 | 3 | 3 | 3 | - | - | - | - | - | - |
| No-PD | 46 | 42 | 38 | 35 | 32 | 26 | 20 | 16 | 11 | 6 | 1 | - | - |

PPP: mCRPC



Pts. at risk

| | | | | | | | | | | | | | |
|-------|----|----|----|----|----|---|---|---|---|---|---|---|---|
| PD | 30 | 25 | 18 | 6 | 4 | 2 | 1 | 1 | - | - | - | - | - |
| No-PD | 16 | 16 | 15 | 13 | 10 | 8 | 5 | 2 | 2 | 2 | 1 | 1 | - |

Supplemental table 1 Univariable cox-regression analyses for the association of response criteria with overall survival for patients with mHSPC.

| Criteria | Response | N* | HR | 95%CI | P value | C-index | 95%CI |
|-----------------|-------------|----------|-----|------------|---------|---------|-------------|
| <i>PSA50</i> | PD vs No-PD | 12 vs 45 | 3.8 | 1.1 – 13.0 | 0.03 | 0.645 | 0.489-0.801 |
| | PD vs No-PD | 8 vs 49 | 5.4 | 1.3 – 23.0 | 0.02 | 0.668 | 0.517-0.818 |
| <i>aPERCIST</i> | PD vs SD | 8 vs 7 | 3.2 | 0.3 – 31.5 | 0.3 | | |
| | PD vs PR/CR | 8 vs 42 | 4.5 | 1.3 – 27.3 | 0.02 | | |
| <i>aPCWG3</i> | PD vs No-PD | 9 vs 48 | 9.7 | 2.3 – 40.4 | 0.002 | 0.743 | 0.611-0.874 |
| <i>PPP</i> | PD vs No-PD | 11 vs 46 | 7.0 | 1.7 – 28.3 | 0.007 | 0.730 | 0.595-0.864 |

Abbreviations: C-index, Harrell's concordance index (C-index); CR, complete remission; HR = Hazard ratio; n/m, non-measurable disease; PD, progressive disease; PSA50, dichotomous, biochemical response with PSA reduction $\geq 50\%$; PR, partial remission; No-PD, no progressive disease which includes complete response, partial response and stable disease; N, number of patients; SD, stable disease; %, percentage;

Supplemental table 2 Univariable cox-regression analyses for the association of response criteria with overall survival for patients with mCRPC.

| Criteria | Response | N* | HR | 95%CI | P value | C-index | 95%CI |
|-----------------|-------------|----------|-----|------------|---------|---------|-------------|
| <i>PSA50</i> | PD vs No-PD | 30 vs 16 | 2.8 | 1.2 – 6.5 | 0.02 | 0.609 | 0.524-0.693 |
| | PD vs No-PD | 25 vs 21 | 5.6 | 2.4 – 13.3 | < 0.001 | 0.706 | 0.651-0.760 |
| <i>aPERCIST</i> | PD vs SD | 25 vs 11 | 4.9 | 1.8 – 13.8 | 0.002 | | |
| | PD vs PR/CR | 25 vs 10 | 6.3 | 1.8 – 21.8 | 0.003 | | |
| <i>aPCWG3</i> | PD vs No-PD | 25 vs 21 | 3.6 | 1.6 – 8.1 | 0.002 | 0.659 | 0.589-0.730 |
| <i>PPP</i> | PD vs No-PD | 30 vs 16 | 4.5 | 1.8 – 10.9 | < 0.001 | 0.693 | 0.647-0.739 |

Abbreviations: C-index, Harrell’s concordance index (C-index); CR, complete remission; HR = Hazard ratio; n/m, non-measurable disease; PD, progressive disease; PSA50, dichotomous, biochemical response with PSA reduction $\geq 50\%$; PR, partial remission; No-PD, no progressive disease which includes complete response, partial response and stable disease; N, number of patients; SD, stable disease; %, percentage;