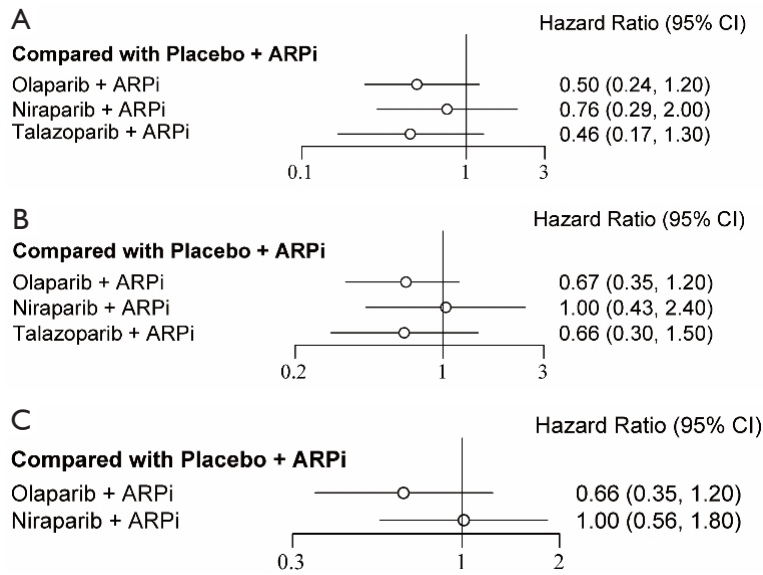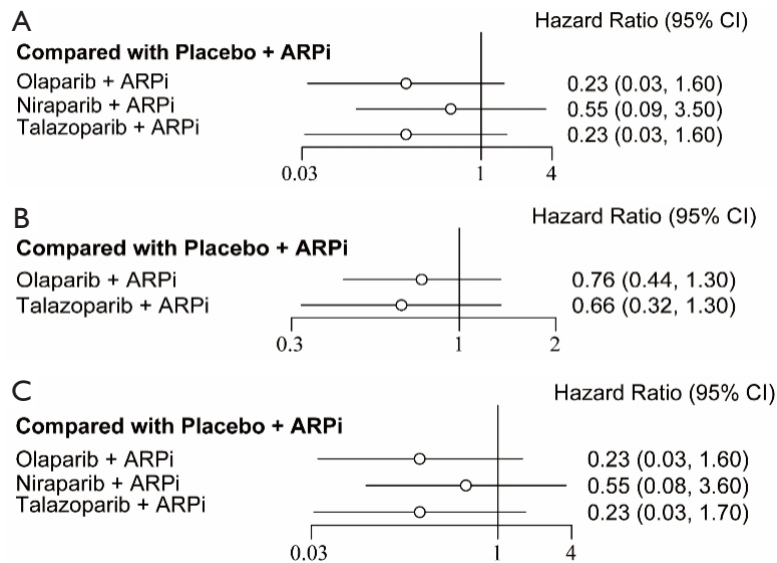**Table S1** The efficacy of PARPis in mCRPC patients with or without HRR or *BRCA1/2* mutations

First author	Year	Study	NCT number	Mutation status	OS (control *vs.* treatment)			rPFS (control *vs.* treatment)		
					Median (range) (months)	HR (95% CI)	P value	Median (range) (months)	HR (95% CI)	P value
Chi *et al.*	2023	MAGNITUDE	NCT03748641	*BRCA1/2*+	28.6 *vs.* 29.3	0.88 (0.58–1.34)	0.55	10.9 *vs.* 19.5	0.55 (0.39–0.78)	<0.001
Saad *et al.*	2023	PROpel	NCT03732820	*BRCA1/2*+	23.0 (17.7–34.2) *vs.* NR (NR–NR)	0.29 (0.14–0.56)	–	8.4 (5.5–14.8) *vs.* NR (NR–NR)	0.23 (0.12–0.43)	<0.001
Fizazi *et al.*	2023	TRITON3	NCT02975934	*BRCA1/2*+	24.3 (19.9–25.7) *vs.* NR (NR–NR)	–	–	4.5 (3.3–5.8) *vs.* 11.2 (9.2–13.8)	0.38 (0.425–0.58)	–
Agarwal *et al.*	2023	TALAPRO-2	NCT03395197	*BRCA1/2*+	–	–	–	NR (NR–NR) *vs.* NR (NR–NR)	0.23 (0.10–0.53)	0.0002
Saad *et al.*	2023	PROpel	NCT03732820	*BRCA1/2*–	38.0 (32.2–43.7) *vs.* 36.9 (35.9–NR)	0.91 (0.73–1.13)	–	19.0 (15.0–19.5) *vs.* 24.1 (19.4–27.6)	0.76 (0.61–0.94)	–
Agarwal *et al.*	2023	TALAPRO-2	NCT03395197	*BRCA1/2*–	–	–	–	NR (NR–NR) *vs.* NR (NR–NR)	0.66 (0.39–1.12)	0.12
Clarke *et al.*	2018	–	NCT01972217	HRR+	–	–	–	6.5 (2.7–NR) *vs.* 17.8 (2.9–27.6)	0.74 (0.26–2.12)	0.58
Bono *et al.*	2020	PROfound	NCT02987543	HRR+	14.0 *vs.* 17.3	0.55 (0.29–1.06)	–	3.5 *vs.* 5.8	0.49 (0.38–0.63)	<0.001
Chi *et al.*	2023	MAGNITUDE	NCT03748641	HRR+	32.2 *vs.* 29.3	1.01 (0.75–1.36)	0.95	13.7 *vs.* 16.7	0.76 (0.60–0.97)	0.03
Saad *et al.*	2023	PROpel	NCT03732820	HRR+	28.5 *vs.* NR	0.66 (0.45–0.95)	–	13.8 *vs.* 28.8	0.45 (0.31–0.65)	–
Agarwal *et al.*	2023	TALAPRO-2	NCT03395197	HRR+	–	–	–	16.4 (10.9–24.6) *vs.* 27.9 (16.6–NR)	0.46 (0.30–0.70)	0.0003
Clarke *et al.*	2018	–	NCT01972217	HRR–	–	–	–	9.7 (2.9–17.5) *vs.* 15.0 (5.4–NR)	0.52 (0.24–1.15)	0.11
Chi *et al.*	2023	MAGNITUDE	NCT03748641	HRR–	–	–	–	NR *vs.* 12.0	1.03 (0.63–1.67)	–
Saad *et al.*	2023	PROpel	NCT03732820	HRR–	38.9 (32.5–NR) *vs.* 42.1 (37.3–NR)	0.89 (0.70–1.14)	–	27.6 *vs.* 19.1	0.72 (0.56–0.93)	–
Agarwal *et al.*	2023	TALAPRO-2	NCT03395197	HRR–	–	–	–	22.1 (16.6–NR) *vs.* NR (25.8–NR)	0.66 (0.49–0.91)	0.01

PARPis, poly (adenosine diphosphate-ribose) polymerase inhibitors; mCRPC, metastatic castration-resistant prostate cancer; HRR, homologous recombination repair; NCT, National Clinical Trial; OS, overall survival; rPFS, radiographic progression-free survival; HR, hazard ratio; CI, confidence interval; NR, not reported.

Figure S1 NMA of (A) rPFS in mCRPC patients with HRR mutations, (B) rPFS in mCRPC patients without HRR mutations, and (C) OS in mCRPC patients with HRR mutations. CI, confidence interval; ARPi, androgen-receptor pathway inhibitor; NMA, network meta-analysis; rPFS, radiographic progression-free survival; OS, overall survival; mCRPC, metastatic castration-resistant prostate cancer; HRR, homologous recombination repair.

Figure S2 NMA of (A) rPFS in mCRPC patients with BRCA1/2 mutations, (B) rPFS in mCRPC patients without BRCA1/2 mutations, and (C) OS in mCRPC patients with BRCA1/2 mutations. CI, confidence interval; ARPi, androgen-receptor pathway inhibitor; NMA, network meta-analysis; rPFS, radiographic progression-free survival; OS, overall survival; mCRPC, metastatic castration-resistant prostate cancer.