

Table 1. Basic characteristic of included studies.

Study	Country	Study period	Design	No. of patients		Age		Comparability	Study quality
				AC/AP	Control	AC/AP	Control		
Ala-Opas et al. 1995	Finland	May. 1993 to Feb. 1994	CCT	40	42	69 (53-85)	75 (64-86)	①④⑥	4 (NOS)
Dotan et al. 2002	America	Nov. 1997 to Feb. 2001	CCT	20	20	N/A	N/A	①③④⑤	6 (NOS)
Nielsen et al. 2000	Denmark	1996 to 1998	RCT	26	27	70 (66-74)	69 (65-76)	①②③④⑤⑥	3 (Jadad)
Descazeaud et al. 2011	France	Jan. 2007 to Dec. 2008	CCT	55	406	75 ± 14.14	71 ± 14.14	②③④⑤⑥	6 (NOS)
Taylor et al. 2011	Australia	Jan. 2008 to Jun. 2009	CCT	7	91	69 ± 6.37	71 ± 8.56	①④	6 (NOS)
Ong et al. 2015	Australia	Jan. 2011 to Dec. 2013	CCT	32	166	N/A	N/A	①④⑤⑥	6 (NOS)
Tyson et al. 2009	England	May. 2002 to Sep. 2007	CCT	25	37	69.4 ± 7.2	65.2 ± 8.7	①③⑤	5 (NOS)
Tayeb et al. 2016	America	1999 to 2014	CCT	30	1558	N/A	N/A	②③④⑤	7 (NOS)
Ruszat et al. 2006	Switzerland	Sep. 2002 to Jan. 2006	CCT	71	92	72 ± 9	68 ± 9	②③⑤	7 (NOS)
Knapp et al. 2017	Australia	Jul. 2010 to Dec. 2016	CCT	59	272	74.9 ± 10.3	67.6 ± 9	①②③⑤	6 (NOS)
Piotrowicz et al. 2017	Poland	2009 to 2012	CCT	65	44	68.3 ± 6.63	66.9 ± 6.5	②③⑤	6 (NOS)
Eken et al. 2018	Turkey	Nov. 2012 to Oct. 2016	CCT	59	174	74.8±9.1	69.2±5.5	①	5 (NOS)
Meskawi et al. 2018	Canada	2011 to 2016	CCT	87	274	70±7.48	66±9.62	①②③④	7 (NOS)

①bleeding complications ②operation time ③catheterization time ④blood transfusion ⑤hospitalization ⑥Thromboembolic events. RCT: randomized controlled trials, CCT: case control trials, AC: anticoagulant, AP: antiplatelet, N/A: not available, NOS: Newcastle–Ottawa Scale, Jadad: Jadad scale. Values are presented as mean ± standard deviation or mean (range).

Table 2. Perioperative parameters of each selected studies.

Study	Surgery type	Prostate volume (ml)		Weight of resected tissue (g)		Preoperative PSA (ng/ml)		Preoperative IPSS		Preoperative maximum urinary flow (ml/s)		AC/AP type	Perioperative management of AC/AP therapy
		AC/AP	Control	AC/AP	Control	AC/AP	Control	AC/AP	Control	AC/AP	Control		
Ala-Opas et al. 1995	TURP	N/A	N/A	30 (7-70)	28 (5-80)	N/A	N/A	N/A	N/A	9 (4.2-19)	9.6 (4.6-16.8)	AC	AC continued
Dotan et al. 2002	TURP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Type of AC/AP was not counted separately	AC/AP withdrawal + LMWH
Nielsen et al. 2000	TURP	N/A	N/A	37 (27-64)	30 (16-50)	N/A	N/A	N/A	N/A	N/A	N/A	AP	AP continued
Descazeaud et al. 2011	TURP	58.5	49	30.5	21.7	3.8	4.6	17.6	20.5	5.8	8.3	AC	AC withdrawal + LMWH
Taylor et al. 2011	TURP	N/A	N/A	17	25	N/A	N/A	N/A	N/A	N/A	N/A	AP	AP continued
Ong et al. 2015	TURP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	AP	AP continued
Tyson et al. 2009	HoLEP	50.3 ± 16.7	49.9 ± 20.6	N/A	N/A	3.9 (2.2)	4.4 (3.9)	16.5 (8.7)	23.5 (6.7)	N/A	N/A	AC	AC continued
Tayeb et al. 2016	HoLEP	N/A	N/A	55.5 (1-206)	68 (0.2-532.2)	5.5	5.2	N/A	N/A	N/A	N/A	AP	AP continued
Ruszat et al. 2006	PVP	58 ± 31	71 ± 39	N/A	N/A	3.4 (2.7)	4.6 (4.2)	N/A	N/A	N/A	N/A	AP	AP continued
Knapp et al. 2017	PVP	90.8 ± 58.7	79.1 ± 47	N/A	N/A	5.6 (6.2)	6.2 (8.0)	17.8 (6.9)	20(7.1)	N/A	N/A	AC	AC continued
Piotrowicz et al. 2017	PVP	66.3 ± 6.63	66.9 ± 6.5	N/A	N/A	2.55 (1.25)	2.68 (1.42)	24.7 (4.58)	25.19 (4.11)	9.78 (2.99)	9.42 (2.73)	Type of AC/AP was not counted separately	AC/AP withdrawal + LMWH
Eken et al. 2018	PVP	61.5 ± 20.7	54.8 ± 16.9	N/A	N/A	3.3 (2.8)	3 (2.4)	22.5 (7.6)	21.6 (5.3)	7.9 (2.2)	8.3 (3.1)	Type of AC/AP was not counted separately	AC/AP withdrawal + LMWH
Meskawi et al. 2018	PVP	71 ± 29.63	76 ± 29.63	N/A	N/A	3.8	7.6	N/A	N/A	N/A	N/A	AP	AP continued

AC: anticoagulant, AP: antiplatelet, PSA: prostate-specific antigen level, IPSS: international prostate symptom score, HoLEP: holmium laser enucleation of the prostate, TURP: transurethral resection of the prostate, PVP: photoselective vaporization of the prostate, LMWH: low molecular weight heparin, N/A: not available, Values are presented as mean ± standard deviation or mean (range).

Table S1. Subgroup analysis of bleeding complication

Subgroup	Studies, n	Heterogeneity			OR, (95% CI)	<i>P</i> value
		Q	<i>P</i> value	I ² , %		
Surgical type						
TURP	5	10.45	0.03	62	2.58 (1.33, 5.02)	0.005
Laser	4	0.97	0.81	0	1.70 (0.54, 5.37)	0.36
AC/AP type						
AC	2	0	0.99	0	0.91 (0.15, 5.56)	0.92
AP	5	10.48	0.03	62	2.65 (1.93, 10.18)	0.004
Perioperative management of AC/AP therapy						
AC/AP continued	7	11.43	0.08	48	2.29 (1.24, 4.24)	0.008
AC/AP withdrawal + LMWH	2	0.05	0.82	0	2.58 (0.54, 12.40)	0.24

AC: anticoagulant, AP: antiplatelet, TURP: transurethral resection of the prostate, LMWH: low molecular weight heparin, OR: odds ratio.

Table S2. Subgroup analysis of blood transfusion

Subgroup	Studies, n	Heterogeneity			OR, (95% CI)	P value
		Q	P value	I ² , %		
Surgical type						
TURP	6	2.09	0.84	0	2.53 (1.23, 5.19)	0.01
Laser	2	0.2	0.65	0	5.47 (1.44, 20.76)	0.01
AC/AP type						
AC	1	-	-	-	3.79 (0.68, 21.21)	0.13
AP	7	2.88	0.82	0	2.76 (1.39, 5.51)	0.004
Perioperative management of AC/AP therapy						
AC/AP continued	7	2.88	0.82	0	2.76 (1.39, 5.51)	0.004
AC/AP withdrawal + LMWH	2	0.17	0.68	0	2.81 (0.77, 10.34)	0.12

AC: anticoagulant, AP: antiplatelet, TURP: transurethral resection of the prostate, LMWH: low molecular weight heparin, OR: odds ratio.

Table S3. Subgroup analysis of operation time

Subgroup	Studies, n	Heterogeneity			MD, (95% CI)	P value
		Q	P value	I ² , %		
Surgical type						
TURP	2	2.36	0.12	58	-1.21 (-10.20, 7.77)	0.79
Laser	5	25.16	0.0001	84	-5.27 (-13.01, 2.46)	0.18
AC/AP type						
AC	2	0.17	0.68	0	-6.53 (-13.10, 0.03)	0.05
AP	4	21.37	<0.0001	86	-4.54 (-14.30, 5.23)	0.36
Perioperative management of AC/AP therapy						
AC/AP continued	5	21.58	0.0002	81	-5.20 (-13.16, 2.76)	0.20
AC/AP withdrawal + LMWH	2	2.35	0.13	57	-1.22 (-8.82, 6.38)	0.75

AC: anticoagulant, AP: antiplatelet, TURP: transurethral resection of the prostate, LMWH: low molecular weight heparin, OR: odds ratio.

Table S4. Subgroup analysis of catheterization time

Subgroup	Studies, n	Heterogeneity			MD, (95% CI)	P value
		Q	P value	I ² , %		
Surgical type						
TURP	3	23.05	<0.0001	91	0.80 (-0.07, 1.67)	0.07
Laser	6	16.24	0.006	69	0.06 (-0.11, 0.23)	0.46
AC/AP type						
AC	3	6.35	0.04	68	0.46 (-0.16, 1.08)	0.14
AP	4	5.72	0.13	48	0.18 (0.11, 0.24)	<0.00001
Perioperative management of AC/AP therapy						
AC/AP continued	6	9.40	0.09	47	0.08 (-0.13, 0.29)	0.44
AC/AP withdrawal + LMWH	3	126.28	<0.0001	98	0.77 (-0.19, 1.73)	0.12

AC: anticoagulant, AP: antiplatelet, TURP: transurethral resection of the prostate, LMWH: low molecular weight heparin, OR: odds ratio.

Table S5. Subgroup analysis of hospitalization

Subgroup	Studies, n	Heterogeneity			MD, (95% CI)	P value
		Q	P value	I ² , %		
Surgical type						
TURP	4	42.41	<0.0001	93	1.24 (-0.15, 2.64)	0.08
Laser	5	8.50	0.07	53	0.20 (-0.08, 0.47)	0.16
AC/AP type						
AC	3	13.99	0.0009	86	1.15 (-0.17, 2.47)	0.09
AP	4	1.08	0.78	0	0.26 (-0.08, 0.60)	0.14
Perioperative management of AC/AP therapy						
AC/AP continued	6	4.46	0.48	0	0.25 (0.01, 0.48)	0.04
AC/AP withdrawal + LMWH	3	240.72	<0.0001	99	1.60 (-0.19, 3.39)	0.08

AC: anticoagulant, AP: antiplatelet, TURP: transurethral resection of the prostate, LMWH: low molecular weight heparin, OR: odds ratio.

Table S6. Subgroup analysis of thromboembolic

Subgroup	Studies, n	Heterogeneity			OR, (95% CI)	P value
		Q	P value	I ² , %		
AC/AP type						
AC	1	-	-	-	3.79 (0.68, 21.21)	0.13
AP	3	0.27	0.87	0	1.75 (0.31, 9.92)	0.53
Perioperative management of AC/AP therapy						
AC/AP continued	3	0.27	0.87	0	1.75 (0.31, 9.92)	0.53
AC/AP withdrawal + LMWH	1	-	-	-	3.79 (0.68, 21.21)	0.13

AC: anticoagulant, AP: antiplatelet, LMWH: low molecular weight heparin, OR: odds ratio.