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Same-day catheter-free discharge versus overnight observation after artificial urinary sphincter surgery:

a systematic review and meta-analysis



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Aim

To compare postoperative outcomes of **same-day catheter-free discharge (SDS)** vs. **overnight observation (OBS)** following artificial urinary sphincter (AUS) implantation.

Methods

- •Design: Systematic review + meta-analysis
- •Sources: PubMed, Scopus, Cochrane, Google Scholar, ClinicalTrials.gov (up to April 2025)
- •Studies: 6 studies (n = 2424; 4 included in meta-analysis, n = 1085)
- •Primary outcomes:
 - Postoperative urinary retention
 - Emergency department (ED) visits within 90 days
- •Secondary outcomes:
 - Suprapubic catheter (SPC) placement
 - Postoperative complications

Results

- •Urinary retention: no significant difference (RR = 1.44; 95% CI 0.81–2.56; p = 0.21)
- •ED visits (90 days): no significant difference (RR = 0.91; 95% CI 0.59–1.42; p = 0.69)
- •**SPC placement:** significantly lower with SDS (RR = 0.28; 95% CI 0.09–0.81; p = 0.02)
- •Risk of bias: moderate to serious in most included studies

Interpretation

- •SDS is not associated with increased urinary retention or ED visits.
- •SDS shows a reduced need for SPC placement, likely reflecting earlier voiding trials and enhanced recovery.
- •Evidence is promising but limited by retrospective design and heterogeneity.

Conclusion

- •Same-day catheter-free discharge after AUS implantation is a safe alternative to overnight observation in selected patients.
- •May reduce catheter-related morbidity and optimize perioperative care pathways.
- •Future RCTs are needed to confirm findings and standardize discharge protocols.

Figure 1. Urinary retention after catheter removal in catheter-free and overnight observation

	SDS		OBS			Odds Ratio	Odds Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% CI	I M-H, Fixed, 95% CI
Dropkin 2021	11	318	5	207	30.8%	1.45 [0.50, 4.23]	3]
Kapriniotis 2024	1	12	0	13	2.2%	3.52 [0.13, 95.09]	9]
Kozar 2023	9	123	20	302	56.6%	1.11 [0.49, 2.52]	2]
Myrga 2023	4	31	4	79	10.4%	2.78 [0.65, 11.89]	9]
Total (95% CI)		484		601	100.0%	1.44 [0.81, 2.56]	5]
Total events	25		29				
Heterogeneity: Chi ² =	= 1.45, df	= 3 (P	0.01 0.1 1 10 100				
Test for overall effect	t: Z = 1.2	5 (P = 0)	0.01 0.1 1 10 100 Favours [OBS] Favours [SDS]				

Figure 2. Emergency department visit after 90 days in catheter-free and overnight observation

	SDS		OBS		Risk Ratio		Risk Ratio	
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% CI	M-H, Fixed, 95% CI	
Dropkin 2021	30	318	24	207	82.4%	0.81 [0.49, 1.35]		
Myrga 2023	6	31	11	79	17.6%	1.39 [0.56, 3.43]		
Total (95% CI)		349		286	100.0%	0.91 [0.59, 1.42]		
Total events	36		35					
Heterogeneity: Chi2 =	= 1.03, df	0 0 0 0 0						
Test for overall effect	t: Z = 0.40		0.5 0.7 1 1.5 2 Favours [OBS] Favours [SDS]					

Figure 3. Postoperative suprapubic catheter placement in catheter-free and overnight observation

Study or Subgroup	SDS		OBS		Risk Ratio		Risk Ratio			
	Events	Total	Events	Total	Weight	M-H, Fixed, 95% CI		M-H, Fixe	ed, 95% CI	
Dropkin 2021	2	318	9	207	78.1%	0.14 [0.03, 0.66]	-			
Kapriniotis 2024	1	12	0	13	3.5%	3.23 [0.14, 72.46]		-		
Myrga 2023	0	31	4	79	18.4%	0.28 [0.02, 5.01]	-		- 5	
Total (95% CI)		361		299	100.0%	0.28 [0.09, 0.81]				
Total events	3		13							
Heterogeneity: Chi ² =	3.10, df	= 2 (P	= 0.21);	$I^2 = 35$	%		0.01	01	10	100
Test for overall effect: $Z = 2.34$ (P = 0.02)								0.1 Favours [OBS]	Favours [SDS]	100