

# Evaluate the effectiveness and safety of heparin saline in preventing measurement catheter blocking during urodynamic examination

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## **Purpose**

To evaluate the effectiveness and safety of using heparin sodium saline as the filling medium to prevent measurement catheter blocking on urodynamic study.

### **METHODS**

A total of 90 patients undergoing urodynamic examination in the West China hospital of SiChuan University from March 2015 to May 2016 were randomized divided into two groups: the control group (using normal saline as filling medium ) and the study group (using 10u/ml heparin sodium saline as filling medium and 10u /ml heparin is widely used in routine nursing work as PICC-tube-sealing-liquid and indwelling -needle-sealing-liquid), there were 45 patients in each group, all patients had signed the informed consent before test . All urodynamic studies were performed based on the international continence society (ICS) standard guidelines for Good Urodynamic Practice by an urodynamicist with at least 5-years experience. All urodynamic studies were performed using the Urodynamic machine (Laborie. System medical technologies .Cnanda) using an electric urodynamics testing chair, fluid at room temperature was filled at a rate of 49.9ml/min.Changes of coagulation indexes [Prothrombin Time (PT), Activated Partial Thromboplastin Time (APTT)], Platelet Count (PLT) and Visual Analogue Scores (VAS) ( The VAS is a validated and widely used assessment tool in the fields of psychology and medicine, it's commonly used to evaluate pain ) in the two groups before and after examination were observed .The bleeding ratio, plugging ratio were compared between theses two groups.

### **RESULTS**

There was no significant difference in PT, APTT, PLT and VAS score between the two groups before and After examination(P > 0.05) ( table1 ) .As the time after test goes by, the VAS scores were decreasing ( table2). The measurement catheter blocking ratio in the study group was significantly lower than those in the control group (P < 0.05) (table3),but there was no significant difference in the incidence of bleeding and catheter-related infections after urodynamic study between the two groups (P > 0.05).

#### CONCLUSIONS

The application of heparin sodium saline has more advantages than normal saline in clinical urodynamic examination. Such as in anticoagulation, relieving pain of patients, reducing the measurement catheter blocking ratio and the incidence of complications under the condition of not increasing the risk of bleeding.

Table 2 Comparison of VAS scores between the two groups after the examination when the

days change ( $x \pm s$ )										
Group	n		1day after study	3days after study	5days after study	P value				
study	45		3.02±0.88	2.04±0.71	1.12±0.58	P<0.05				
control	45		3.88±1.01	2.91±0.89	1.90±1.51	P<0.05				

Table 3 Comparison of bleeding rate and measurement catheter blocking rate between the two groups after the examination [n (%)]

Group	n	Bleeding	Plugging	
Study	45	4 (8.8)	1 (2.2)	
Control	45	9 (20.0)	8 (17.7)	
<i>x</i> <sup>2</sup>	-	1.43	4.44	
P -		P>0.05 (P=0.23)	P<0.05 (p=0.03)	

#### Table 1 Comparison of coagulation function indexes and PLT between the two groups

before and after the examination $(\overline{x} \pm s)$ n=45)										
Group	PT (s	>	APTT (s)		PLT (×10°/L)					
	Befor	After	Befor	After	Befor	After				
	examination	examination	examination	examination	examination	examination				
study	12.89±2.02	12.29±2.90	34.23±2.36	34.01±1.56	131.75±46.01	132.36±50.23				
control	12.76±2.10	13.86±2.06	34.30±2.37	35.98±2.31	130.70±45.91	131.60±48.82				
P value	P>0.05	P>0.05	P>0.05	P>0.05	P>0.05	P>0.05				