EXIT SITE DRESSING AND INFECTION IN PERITONEAL DIALYSIS: A RANDOMIZED CONTROLLED TRIAL

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Introduction

Peritoneal dialysis (PD) related infection is a common cause of catheter loss and the main reason for PD drop-out. Exit site infection (ESI) is a pathway to developing tunnel infection and peritonitis, hence rigorous exit site care has always been emphasized in PD therapy.

Objective

The aim of this study was to evaluate the effect of exit site dressing versus non-dressing on the rate of PD-related infection.

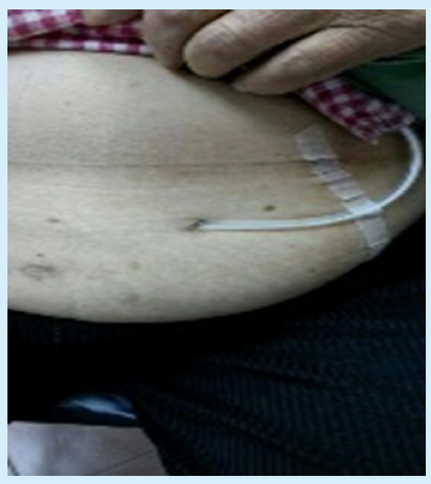
Methodology

A prospective randomized controlled study was conducted in prevalent PD patients in Hospital Tuanku Jaafar Seremban, Negeri Sembilan, Malaysia from April 2011 until April 2013.

All patients were required to perform daily washing of the exit site with antibacterial soap during a shower. In the dressing group (n=50), patients were required to clean their exit site using povidone-iodine after drying, followed by topical mupirocin antibiotic application to the exit site. The exit site was then covered with a sterile gauze dressing and the catheter immobilized with a tape (Picture 1).

In the non-dressing group (n=48), patients were not required to do any further dressing after drying. They were only required to apply mupirocin cream to the exit site and then left the exit site uncovered. The catheter was immobilized with a tape (Picture 2). The primary outcome was ESI. The secondary outcomes were evidence of tunnel infection or peritonitis.

Picture 1: Dressing



Picture 2: Non-Dressing

Results

Total of 98 patients completed the study. There was no significant difference in patient's age, assisted care, diabetes or mean duration on PD between both groups.

Results

Table 1: Patient characteristics

	Dressing (n=50)	Non-dressing (n=48)	p value
Mean age, years ± SD	50.6±16.14	52.4±14.41	0.55
Assisted care, n(%)	12(23.5%)	8(16.3%)	0.52
Diabetes, n(%)	36(68.6%)	38(77.6%)	0.44
Mean duration on PD before recruitment, days ± SD	393.0±607.0	279.5±657.0	0.15
Mean follow-up, days ± SD (range)	639.0±47.0 (148-814)	627±80.0 (161-813)	0.06

Table 2: Exit site and peritonitis

	Dressing (n=50)	Non-dressing (n=48)	p value
Exit site infection organsim			
S. aureus	1	1	
other gram positive	1	1	
P. aeruginosa	2	0	
Other gram negative	0	0	
Yeast	0	0	
Culture negative	0	1	
Others	0	1	
ESI rate (pt-mths per episode)	1:245.1	1:218.1	0.95
Median time to first ESI, days ± IQR	177.5 ± 362.0	85 ± 128.0	0.25
Peritonitis organism			
S. aureus	1	0	
other gram positive	1	0	
P. aeruginosa	1	1	
Other gram negative	2	6	
Yeast	1	0	
Culture negative	5	7	
Otherss	0	1	
Peritonitis rate (pt-mths per episode)	1:48.46	1:40.84	0.49
Median time to first PD peritonitis, days±IQR	63.00±199	241.00±184	0.034

Four patients in each group developed ESI (1 episode per 245.1 patient-months vs 1 episode pr 218.1 patient-months in the dressing and non-dressing groups, respectively; p=0.95). Time to first ESI episode was shorter in the non-dressing group than in the dressing group, but not significant. Incidence of gram-positive ESI isolates in both groups was similar. However, there were no gram-negative ESI isolates in the non-dressing group compared with 2 in the dressing group.There was no significant difference in peritonitis rate between the 2 groups (1 per 48.46 patient-months in the dressing group and 1 per 40.84 patient-months in the non-dressing group). Mean time to first peritonitis was longer in the non-dressing group.(Table 2).

Conclusion

Use of a non-dressing technique with only prophylactic topical mupirocin cream application is effective in preventing PD-related infection. The non-dressing technique is more cost effective and more convenient for PD patients.

Keywords: Dressings, exit site infection, tunnel infection, peritonitis

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