

Can we reduce the incidence of peritoneal catheter tunnel and exit site infections in Peritoneal Dialysis?

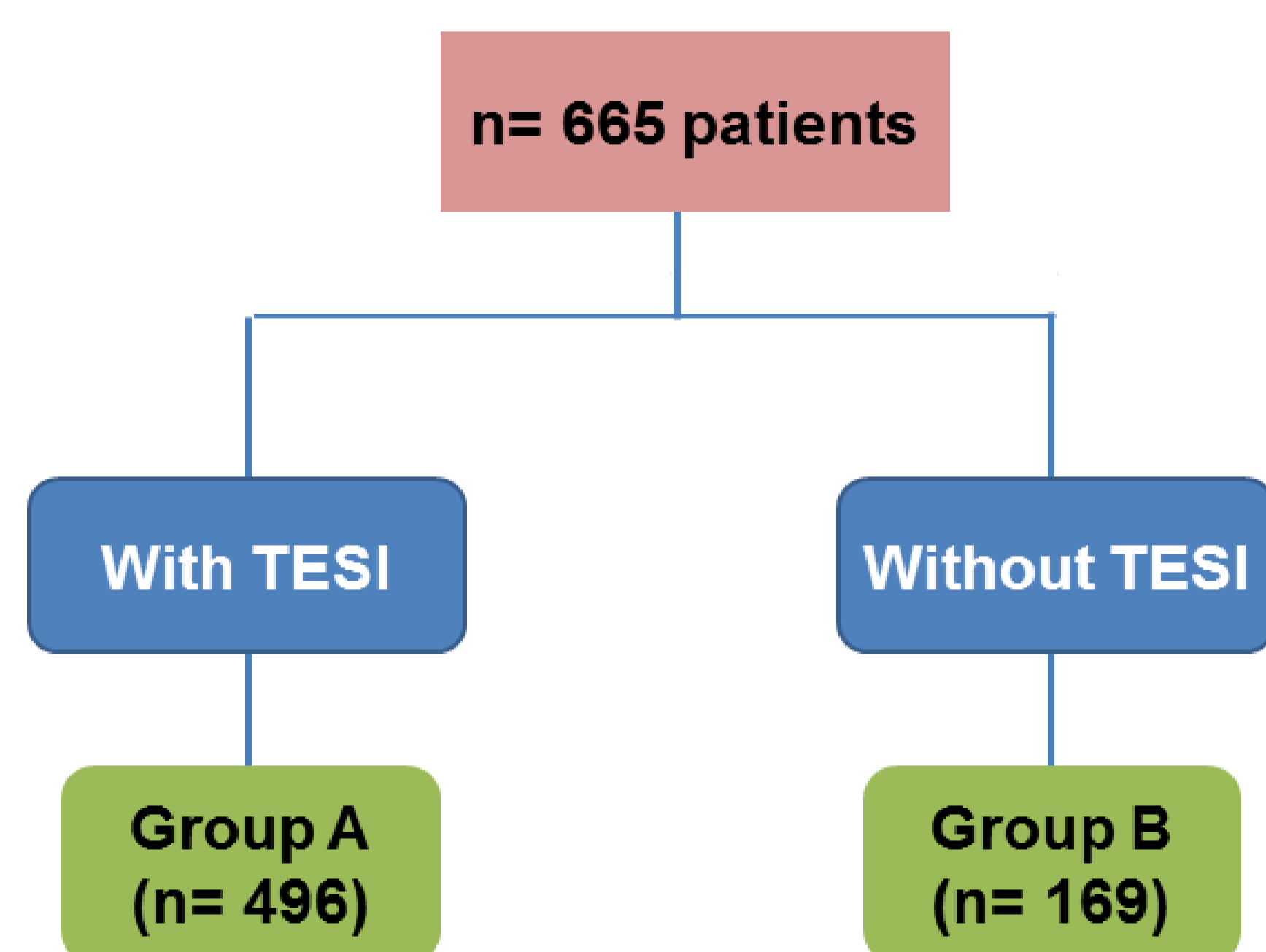
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INTRODUCTION AND AIMS:

Tunnel and exit site infections (TESI) portend a potential risk of peritonitis and frequently demand peritoneal catheter removal, having a significantly contribution to Peritoneal Dialysis (PD) technique failure. Establishing risk profiles for TESI may have an important role in their prevention.

METHODS:

We developed a retrospective cohort study of all patients treated with PD in a single unit between 1990 and 2012. Main demographic, clinical and PD-related variables were compared between patients who suffered at least one episode of TESI and those remaining free of this complication. We applied univariate strategies of analysis, including survival between catheter insertion and first episode of TESI (Kaplan-Meier), and produced adjusted risk profiles for this complication using multivariate survival models (Cox).



Baseline characteristics of population (n=665 patients)			
Female: Male	280: 385	Year of PD start	
Age	62 ± 15.9 years	1990-2000	50%
Rural residence	30%	2001-2012	50%
IMC	25.5 ± 4.4 kg/m ²	PD first	89%
Charlson score	3.8 ± 1.7	Hemodialysis	7%
Diabetes	34%	Renal transplant	4%
Ischemic cardiopathy	26%	Lack of vascular access	12%
Cerebrovascular disease	9%	PD modality	
Hb	10.4 ± 1.7 g/dL	CAPD	68%
GFR	5.8 ± 3.6 mL/min	APD	32%
Kt/V	2.5 ± 0.7	Assisted PD	41%
Serum albumin	3.7 ± 5.6 g/dL	Mini-laparotomy	89%
Previous kidney transplant	5%	Time catheter insertion- PD start	32 ± 36 days
Previous immunosuppression	8%	S. aureus carriage	45%
		MS	43%
		MR	2%

Microbiological profile	TESI rate in our PD Unity
Staphylococcus aureus (47%) Gram negative (34%)	1 episode per 85 patient-months

Univariate analysis comparing the group without TESI (group A) and the group with TESI (group B)

Variable	Group A	Grupo B	p value
PD start before 2000 (%)	44%	73%	<0.001
Time catheter insertion- PD start (days)	34 ± 38 dias	24 ± 25 dias	0.001
S. aureus carriage (%)	39%	60%	0.001
CRP	0.5 ± 3.8 mg/dL	0.8 ± 1.8 mg/dL	0.037
Hb	10.4 ± 0.1 g/dL	10.0 ± 0.1 g/dL	0.015
Peritonitis (%)	50%	68%	0.000

Multivariate Analysis of Risk Factors for TESI

Risk factors	HR (95% CI)	p value
PD start before 2000	2.4 (1.7- 3.3)	0.000
S. aureus carriage	1.4 (1.1-1.9)	0.014
Time catheter insertion- PD start < 30 days	1.8 (1.3-2.7)	0.012

Adjusted for sex, age, rural residence, BMC, Charlson score, diabetes, Hb, serum albumin, previous KT, previous immunosuppression, PD start year, PD first, PD modality, assisted PD, time catheter insertion-PD start and S. aureus carriage

CONCLUSIONS:

Systematic screening and treatment of SAu carriers do not fully prevent an increased incidence of TESI in this subpopulation.

An adequate delay between peritoneal catheter insertion and initiation of PD should be allowed to reduce the incidence of TESI (time less than 30 days was associated with a increased risk of development of TESI).

Patients suffering TESI also undergo increased peritonitis rates; this phenomenon cannot be explained solely by episodes of catheter-dependent peritonitis.

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