

BUTTONHOLE CANNULATION VERSUS CONVENTIONAL ROPE LADDER CANNULATION ON NATIVE ARTERIOVENOUS FISTULA- A 1-YEAR STUDY ON INFECTION, THROMBOSIS, ANEURYSM AND PRIMARY ARTERIOVENOUS FISTULA PATENCY



Chua HL, Kanda HK, See SL, Liew NC
Mawar Hemodialysis Center, Seremban, Malaysia .

Department of Surgery, University Putra Malaysia, Selangor, Malaysia

Introduction And Aims:

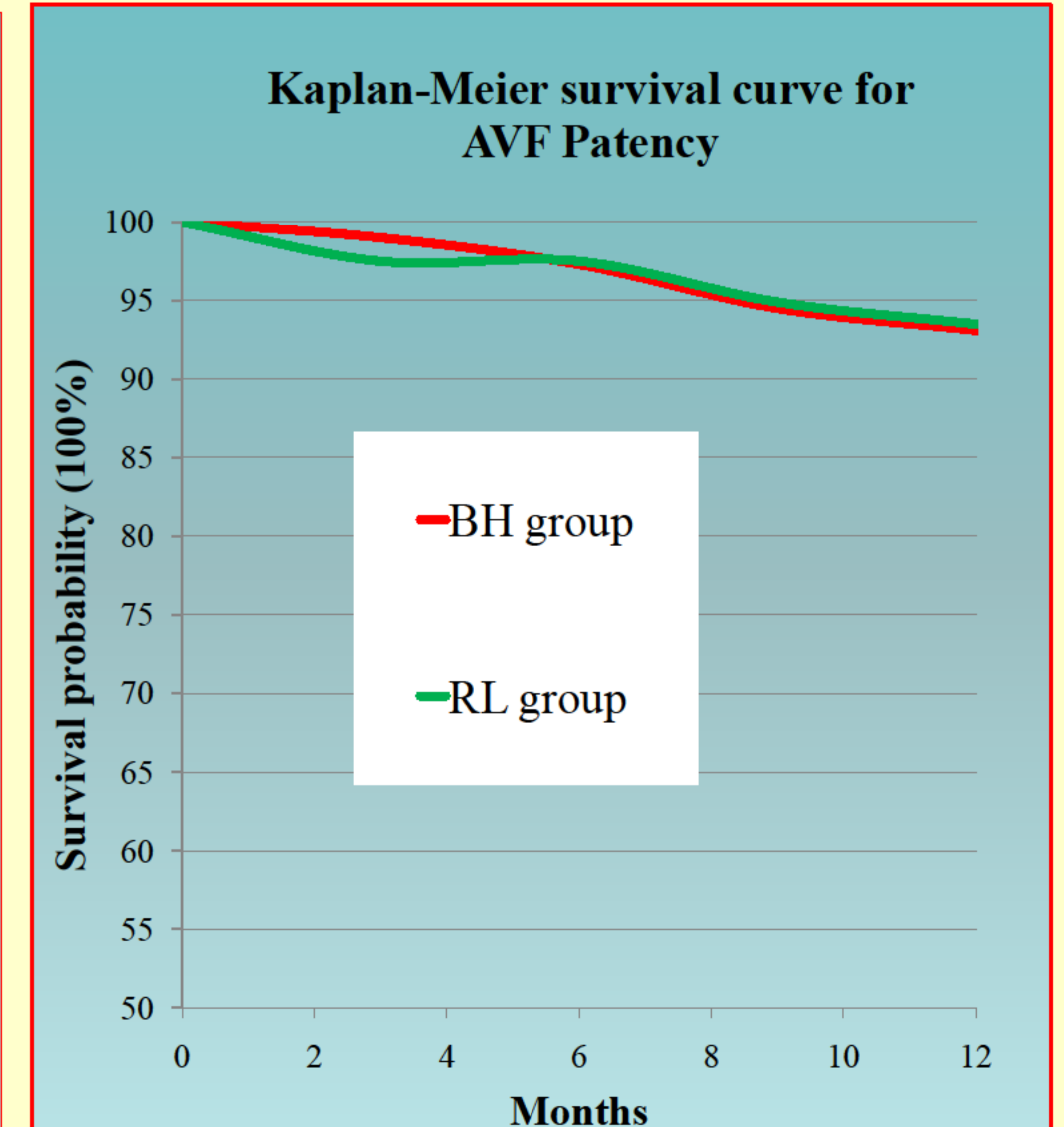
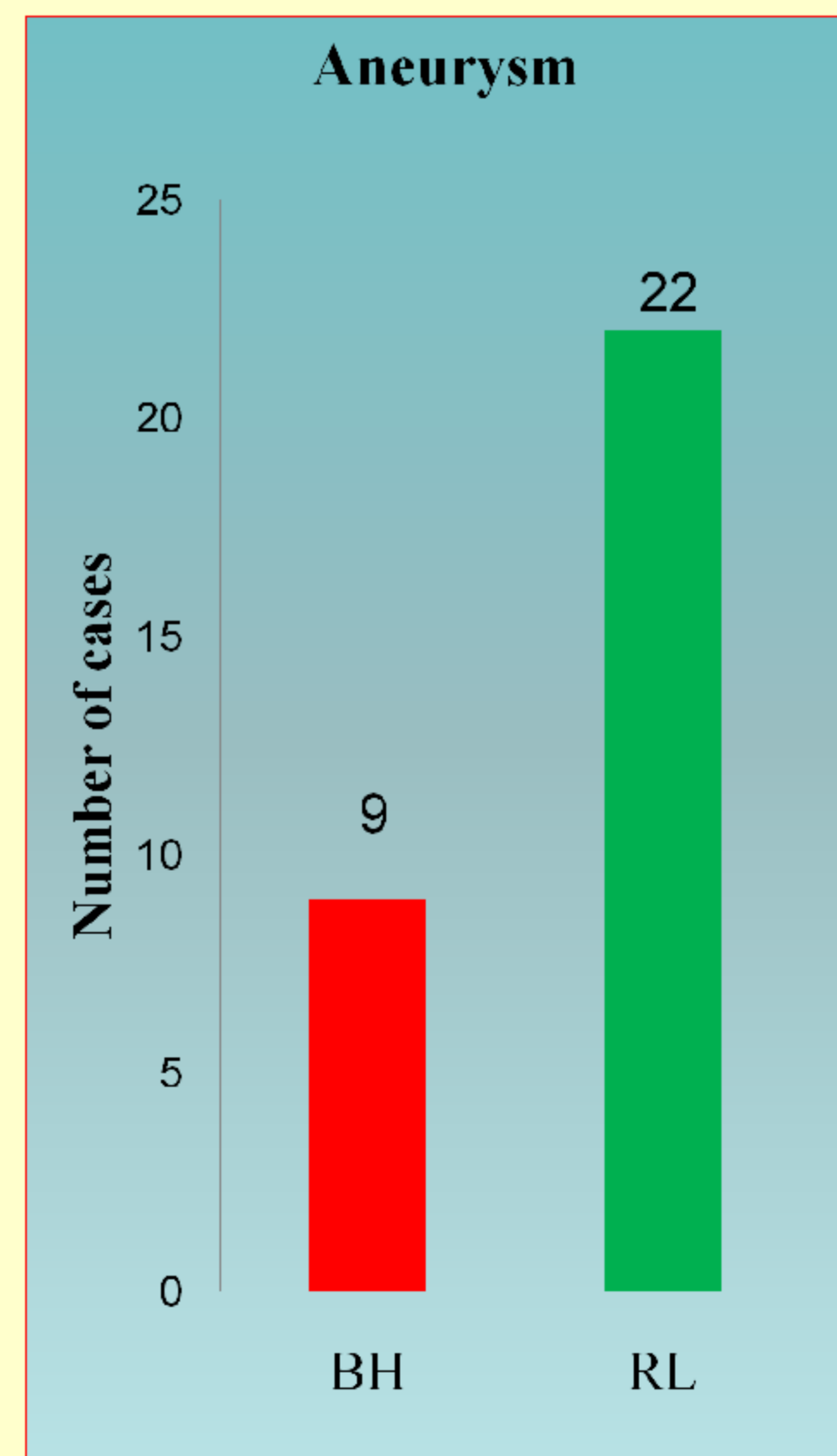
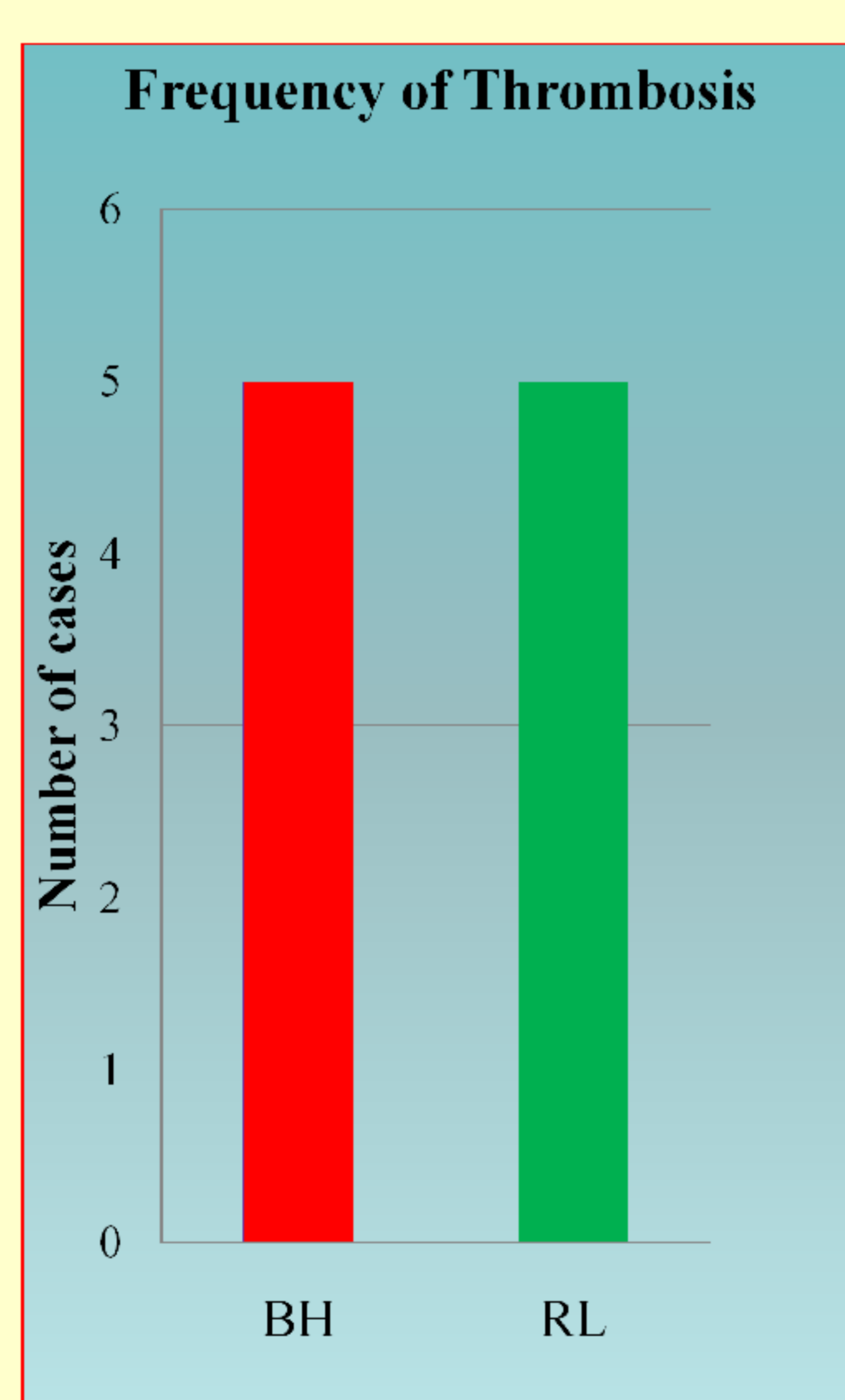
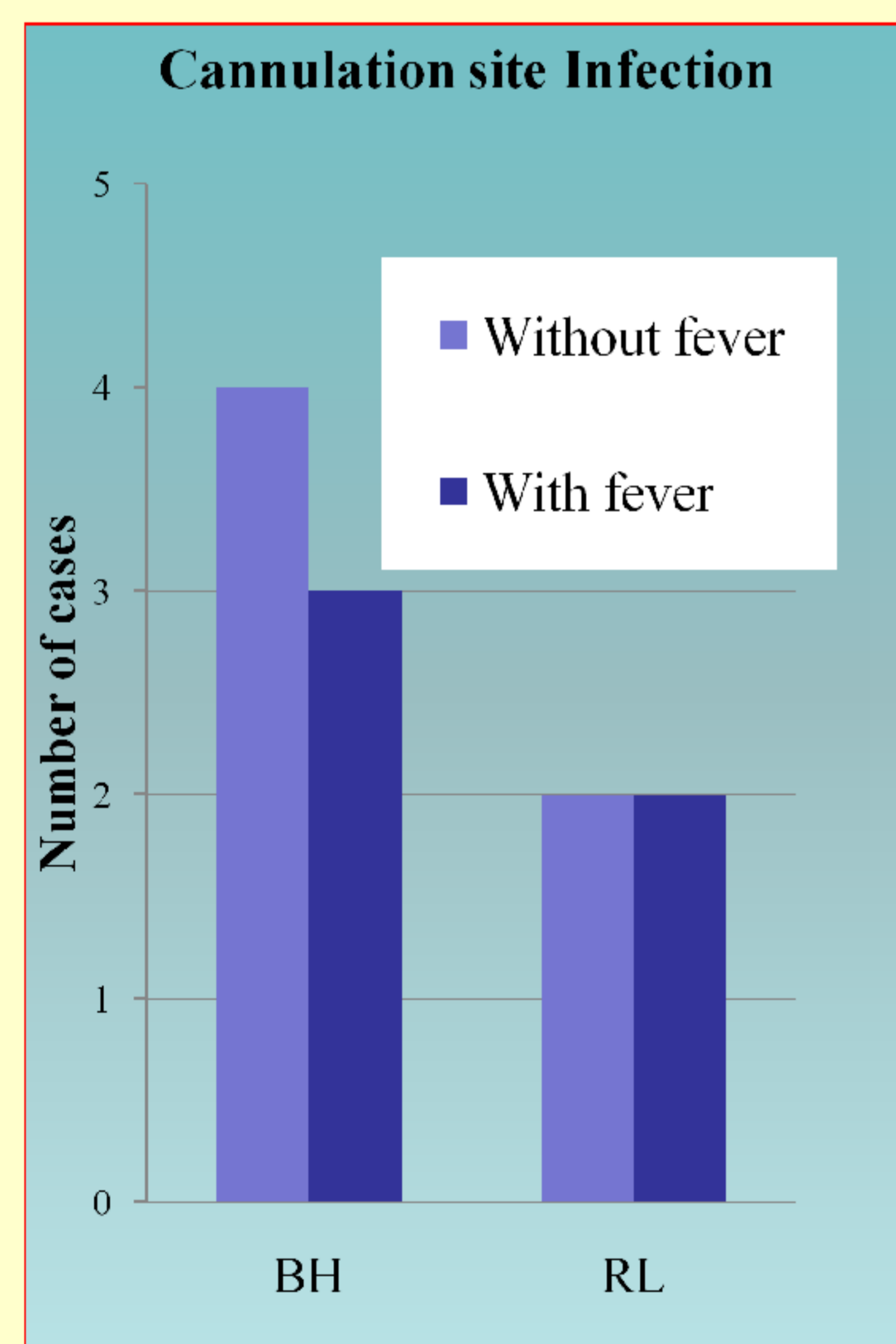
Buttonhole cannulation (BH) of arteriovenous fistula (AVF) has been reported to be superior to rope ladder cannulation (RL) in some studies in terms of inducing less pain, less aneurysm formation and improved patency. Recent studies however, have cautioned the potential for increased blood stream infection and septicemia. There were few reports in Asia on BH cannulation and the effect this would have on the smaller veins is unknown. The aim of this study was to compare the medium term outcomes of this method to the conventional RL cannulation on frequency of infection, thrombosis, aneurysm formation and primary patency of AVF.

Methods:

A one year prospective cohort study was conducted in Mawar Hemodialysis Center from 18/7/2012- 17/7/2013. All patients with BH cannulation were included and matched with a group with conventional RL cannulation. The patients were followed up 3 monthly. The occurrence of infection, thrombosis and aneurysm formation was recorded. An aneurysm was defined clinically as venous dilatation of 3 times the native vein diameter. The data was analyzed, Kaplan-Meier survival curve for primary AVF patency in each group was plotted and compared using logrank test.

Results:

Category	BH group	RL group	P-value
Number of patient	81	81	
Mean primary AVF patency	890 days	940 days	
Number of death and transfer out	13	11	0.8254
Cannulation site infection without fever	4 (0.14 per 1000 AVF days)	2 (0.07 per 1000 AVF days)	0.6816
Cannulation site infection with fever	3 (0.10 per 1000 AVF days)	2 (0.07 per AVF days)	1.0000
Number of thrombosis	5 (0.06 per patient-year)	5 (0.06 per patient- year)	1.0000
Aneurysm	9 cases	22 cases	0.0156
Primary AVF patency	6 months- 97.3% 1 year- 93.1%	6 months- 97.5% 1 year- 93.5%	0.9596



Conclusions:

BH cannulation method appeared to have less aneurysm formation. The 2 groups did not differ significantly in the frequency of infection, thrombosis and primary AVF patency at 6 months and 1 year. If all things being equal, BH cannulation method, requiring lesser length of vein for cannulation would appear to be advantages to RL cannulation in the medium term. A randomized controlled trial is however needed to confirm the study outcome.

