IN-LINE FILTRATION INCREASE PATIENTS' SATISFACTION ON PERIOPERATIVE PERIPHERAL VENOUS CANNULATION: A QUALITATIVE SURVEY.

Dr. Giua R., Dr. Villa G., Dr. Biondi S., Dr. Barbani F., Dr. Balsorano P., Dr. Selmi V., Dr. Zagli G., Dr. Chelazzi C.,
Dr. Romagnoli S., Dr. Pinelli F.

Department of Health Science, Section of Anaesthesia and Intensive Care, University of Florence
Azienda Ospedaliera Universitaria Careggi, Florence, Italy

BACKGROUND: Thrombophlebitis is a frequent complication of peripheral venous cannulation (PVC) among hospitalized patient undergoing surgical procedures¹. It often produces severe discomfort, pain and movement limitation. As previously demonstrated, in-line filtration had an independent effect in reducing postoperative thrombophlebitis in a cohort of surgical patient². The aim of this qualitative survey is to evaluate the effect of in-line filtration in improving satisfaction on perioperative PVC.

METHODS: 268 patients enrolled in the previous trial² were telephone recalled 6 months after their hospital discharge and analysed through a self-reported quativative/qualitative questionnaire. This assessed several domains related to PVC, such as the overall patients' satisfaction, comparison with previous experience, discomfort, functional limitation and chronic symptoms related to post-phlebitis syndrome.

RESULTS: Among the original population enrolled in the randomized trial, 110 (82%) and 103 (76.9%) patients respectively for in-line filtration and control groups were available for this prospective survey Fig.1 .

Within in-line filtration group, 97.3% of patients were satisfied/really-satisfied on the perioperative management of their PVC; if compared with previous experiences on PVC, 11% of them recognized in-line filtration as a relevant causative factor in determining their satisfaction. Among patients within control group, 93.2% were satisfied/really-satisfied on the perioperative management of their PVC, although up to 30% of them experienced postoperative phlebitis. At the qualitative interview they recognized no differences than previous experiences on PVC, and mentioned postoperative phlebitis as a usual complication that “normally occur” during hospital stay. Un-satisfied patients were double in the control group (6.8%) than in the in-line filtration group (2.7%). Every un-satisfied patient within in-line filtration group had a venous cannula of large diameter, placed in a site different than the recommended cephalic vein of the arm and presented postoperative phlebitis.

Fig. 1 The selection process for the qualitative/quantitative questionnaire.

	Filter group (n=110)			No-filter group (n=103)		
	RS/S patients n=107 (97.3%)	RU/U/N patients n=3 (2.7%)	p	RS/S patients n=96 (93.2%)	RU/U/N patients n=7(6.8%)	p
Phlebitis incidence	4 (3.7%)	3 (100%)	0.001	27 (28.1%)	3(42.9%)	0.41
Cannula anatomic location			0.001			0.04
Median cubital vein	3 (2.8%)	0		3 (3.1%)	0	
Cephalic vein of the forearm	79 (73.8%)	0		69 (71.9%)	2 (28.6%)	
Superficial dorsal veins of the hand	25 (23.4%)	3 (100%)		24 (25.0%)	5 (71.4%)	
Previous PVC	82 (93.2%)	2 (66.7%)	0.21	65 (67.7%)	7 (100%)	0.10
Improvement compared to previous PVC	9 (11%)	0	0.62	0	0	-
Discomfort in daily activities	1 (0.9%)	3 (100%)	0.001	5 (5.2%)	3 (42.9%)	0.01

CONCLUSIONS: In-line filtration contributes, beside other good practices on insertion and management of PVC, in increasing patient satisfaction and reducing PVC-related discomfort. To the best of our knowledge, this is the first study aimed to evaluate the patients' perspective on in-line filtration, both qualitatively and quantitatively. No comparison with previous results is thus available.

1. Niël-Weise BS et al. Should in-line filters be used in peripheral intravenous catheters to prevent infusion-related phlebitis? A systematic review of randomized controlled trials. Anesth Analg. 2010;110(6):1624-1629.

2. Villa G. et al. In-Line Filtration Reduces Postoperative Venous Peripheral Phlebitis Associated With Cannulation: A Randomized Clinical Trial. Anesth Analg. 2018;Apr 23