INFLUENCE OF VASCULAR ACCESS PUNCTURE NEEDLE CALIBER ON THE EFFICACY OF ONLINE HEMODIAFILTRATION.

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INTRODUCTION:

Higher infusion volumes in online hemodiafiltration (OL-HDF) are associated with better survival.
Infusion volume depends mainly on blood flow (Qb).

OBJECTIVES:

The objectives of our study were to evaluate the influence of the caliber of arteriovenous fistula (AVF) puncture needles on total convective volume and other characteristics of OL-HDF and to investigate possible adverse effects.

MATERIAL AND METHODS:

Prospective interventional study.

Six sessions of postdilution OL-HDF with 14G needles and six sessions with 15G needles in the same patients.

The monitor, dialyzer, arterial and venous pressures, and conductivity and flow of the dialysis fluid were the same for all patients.

RESULTS:

34 pacients, age 55±16 years, 63% male.

EFFICACY

	G15 NEEDLES	G14 NEEDLES	P
Qb (ml/min)	354.8±25.8	471.1±36.7	<0.001
Total convective volume (liters)	24.1±3.6	29.7±5.7	<0.001
Mean arterial pressure (mmHg)	-190.75 (±31.80)	-179.74 (±35.61)	0.212
Mean venous pressure (mmHg)	182.08 (±17.77)	179.06 (±17.25)	0.507
Reduction in creatinine (%)	70.31±6.67	73.94±6.03	0.031
Reduction in urea (%)	78.80±6.52	82.54±6.41	0.029
Reduction in β2microglobulin (%)	81.45±5.16	84.07±4.83	0.047

ADVERSE EFFECTS

	AGUJAS G15	AGUJAS G14	P
Visual analog scale	3.57±2.04	4.03±2.09	0.386
Arterial coagulation time (minutes)	16.63±3.79	16.70±3.65	0.998
Venous coagulation time (minutes)	16.83±4.25	16.83±4.25	1.000
Complications	One bleeding	One bleeding	

CONCLUSION:

The use of 14G needles improves the efficacy of OL-HDF without increasing the associated adverse effects. Therefore, 14G needles should be used in OL-HDF whenever possible.

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