



DIALYSIS DOSE COMPARISON BY REAL-TIME KT/V THROUGH ULTRAVIOLET ABSORBANCE IN SPENT DIALYSATE, SINGLE-POOL DAUGIRDAS II AND KT/BSA, ACCORDING SEX AND AGE

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OBJECTIVES

Individuals of lower weight and higher relative metabolic rate receive lower dialysis dose with the use of KtV urea. KtV On Line through ultraviolet absorbance in spent dialysate (KtVOL) avoids inaccuracies associated with the estimation of urea volume distribution (V). Impact of age is not known. The study aims to compare KtVOL with KtV urea Daugirdas II and KtBSA according sex and age.

METHODS

Urea kinetics to calculate KtV single pool Daugirdas II of 47 adult patients for at least 3 months in Hemodialysis. Determination of dry weight by Dry-Weight Reduction in Hypertensive Hemodialysis Patients (DRIP). A Randomized Controlled Trial study methodology (*Hypertension. 2009;53:500-507*). Clinical and laboratory data collected in the month following determination of dry weight. V and BSA values obtained by Watson and Haycock formulas. VBSA ratio considered as conversion factor from KtV to KtBSA. KtVOL in the day of the kinetics on B BRAUN DIALOG machines. Statistics by IBM SPSS 20.0.

RESULTS

Regarding clinical and laboratory characteristics (age, dry weight, height, KTV, KtVOL, BSA, Kt, V, KtBSA, VBSA, hemoglobin, albumin, DM and race), dry weight ($75,69 \pm 14,81$ vs $64,75 \pm 9,20$ P = 0,010), height ($1,69 \pm 0,08$ vs $1,58 \pm 0,10$ P = 0,000), V ($34,67 \pm 4,21$ vs $30,82 \pm 3,08$ P = 0,002), BSA ($1,89 \pm 0,22$ vs $1,70 \pm 0,16$ P = 0,03), Kt ($41,61 \pm 5,05$ vs $36,98 \pm 3,70$ P = 0,002), KtBSA ($21,95 \pm 0,16$ vs $21,74 \pm 0,17$ P = 0,000) and VBSA ($18,29 \pm 0,16$ vs $18,12 \pm 0,17$ P = 0,000), presented significant differences in the comparison between males and females (Student t test). Age ($56,74 \pm 9,65$ vs $72,45 \pm 6,52$ P = 0,000) and height ($1,68 \pm 0,10$ vs $1,62 \pm 0,95$ P = 0,030) presented significant differences in the comparison between group I (< 65 years) and group II (≥ 65 years) (Student t test). Pearson correlation for the total group between KtVOL and KtV = 0,452, P = 0,001, and between KtVOL and KtBSA = -0,462, P = 0,001. Pearson correlation was only significant for males (FIGURE 1) and group I (FIGURE 2). Table 1 shows KtVOL/KtV ratio of the groups. Males had a V/BSA ratio greater than females, as < 65 years had a V/BSA ratio greater than ≥ 65 years (TABLES 2 and 3).

FIGURE 1: Scatter plot for KtVOL x KtV and KtVOL x KtBSA

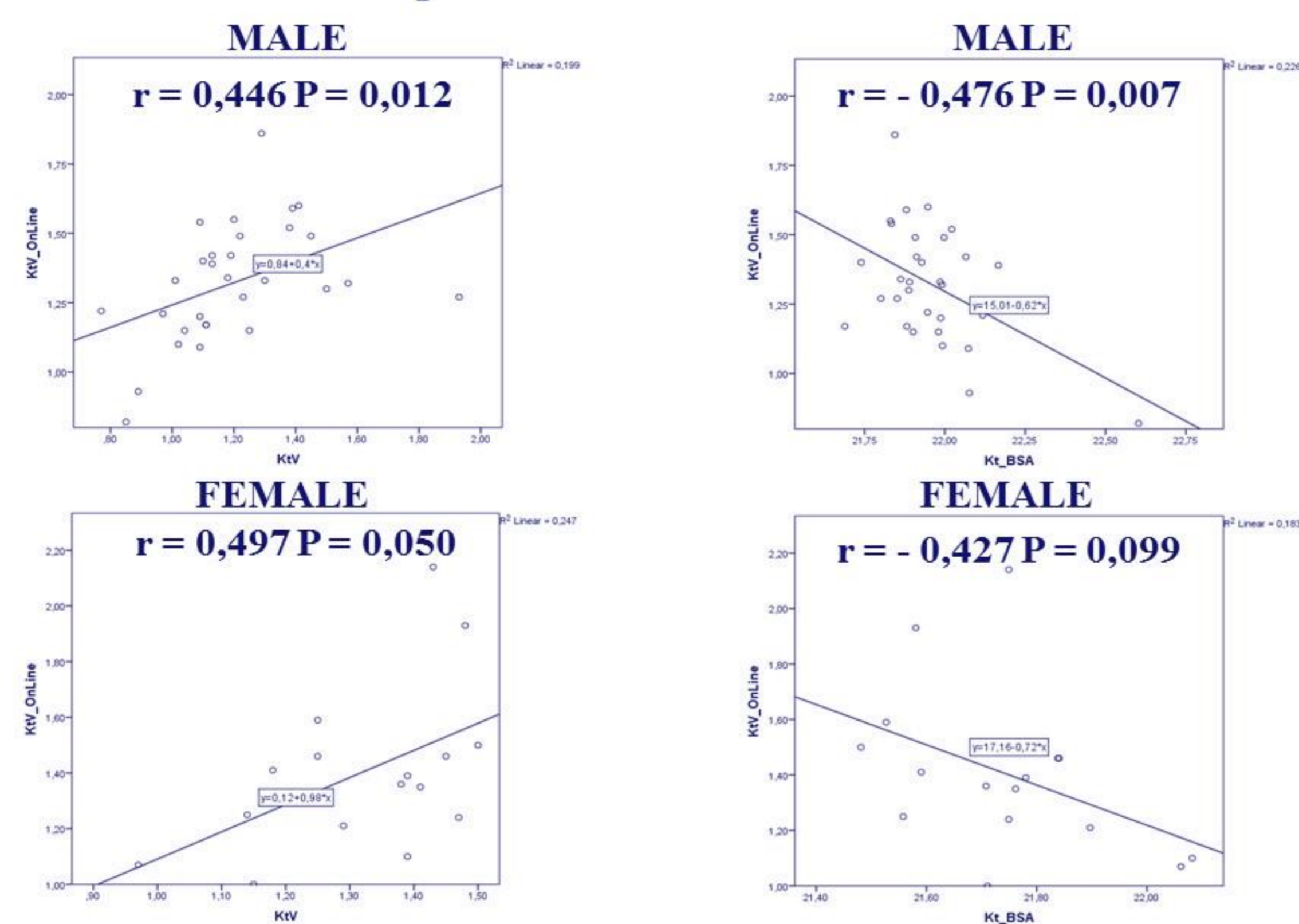


Table 1: Comparison KtVOL / KtV of the groups

	KtVOL	KtV	P
TOTAL	1,35 ± 0,24	1,24 ± 0,21	0,004
Male	1,32 ± 0,21	1,20 ± 0,23	0,008
Female	1,40 ± 0,30	1,32 ± 0,15	0,218
Group I	1,31 ± 0,27	1,23 ± 0,23	0,096
Group II	1,39 ± 0,20	1,26 ± 0,20	0,011

Student t test

FIGURE 2: Scatter plot for KtVOL x KtV and KtVOL x KtBSA

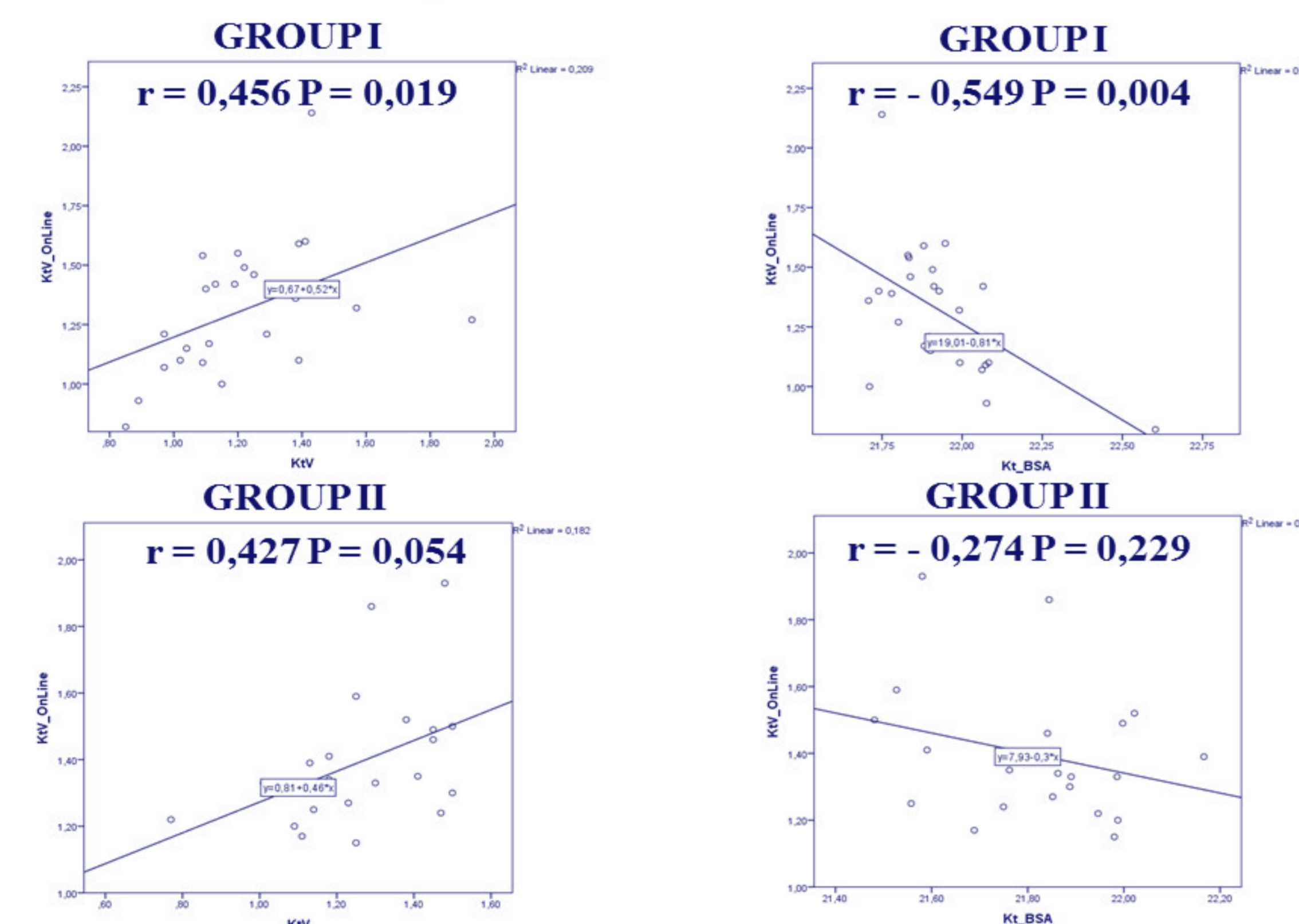


Table 2: V / BSA between sex groups

	MALE	FEMALE	P
V/BSA	18,29 ± 0,13	18,12 ± 0,15	0,000

Student t test

Table 3: V / BSA between age groups

	I	II	P
V/BSA	18,28 ± 0,15	18,18 ± 0,16	0,000

Student t test

CONCLUSIONS

Men and individuals ≥ 65 years have significant positive correlation between KtVOL and KtV and significant negative correlation between KtVOL and KtBSA. KtVOL indicates higher dialysis dose for men and individuals ≥ 65 years compared to KtV. V/BSA ratio is significantly higher for men than women and for individuals < 65 years than older. KtVOL allows recognition of real-time dialysis urea kinetics regardless of sex and age.