

HYPERTENSION AND ERYTHROPOEITIN RESISTANCE. MULTIVARIATE EXPLANATORY FACTORS ANALYSIS

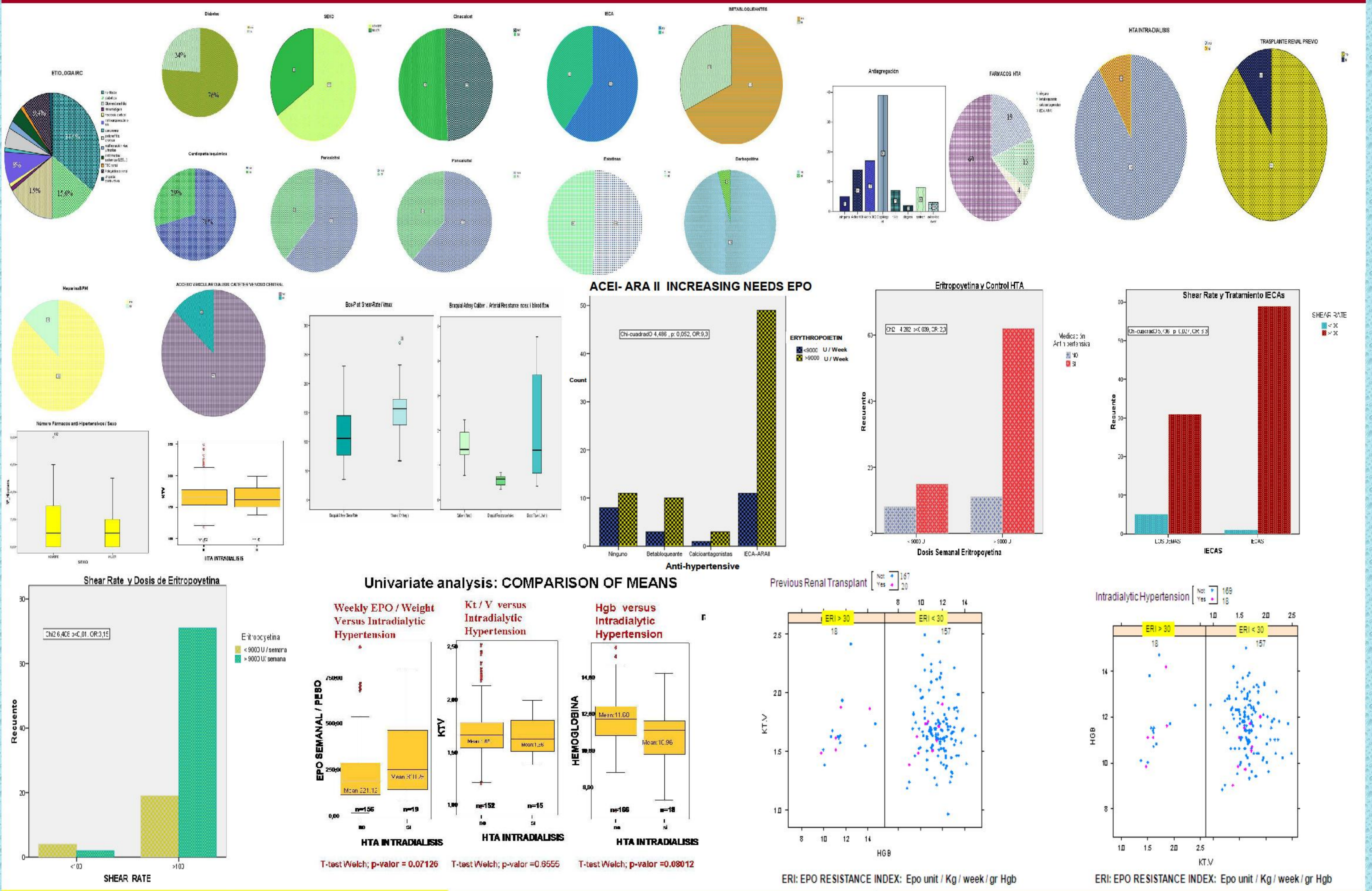
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Introduction: Intradialytic hypertension can be defined as the increase in mean arterial pressure ≥ 15 mmHg that appears in the 2nd-3rd hour of hemodialysis and that does not diminish with Ultrafiltration. In hypertension in hemodialysis patients involved include volume overload, increased cardiac output, stimulation of the renin-angiotensin system, sympathetic nervous system activation, electrolyte changes that occur during hemodialysis, the increase in blood viscosity after ultrafiltration, and elimination of antihypertensive drugs through the dialyzer. Treatment of anemia with Erythropoietin is associated with increased peripheral vascular resistance increased hematocrit, increased plasma levels of endothelin and decreased nitric oxide synthesis, stocks that worsen hypertension control.

Patients and Methods: We studied 187 patients with CRF-V in hemodialysis with a pattern of 4 hours / session / 3 sessions a week. Analyzed: age, sex, months on hemodialysis, PTH, albumin, ferritin, Baking, weekly Erythropoietin dose / weight, and type of EPO, Hct, Hgb, Ab treatment. Folic Cinacalcet, paricalcitol, statins, type of heparin, if they had central venous catheter for vascular access, Kt / V, type and number of antihypertensive drugs, previous renal transplantation. In 20 patients after hemodialysis were measured in the brachial artery of the arm of the fistula by Doppler ultrasound, caliber, blood velocity, blood flow, and shear rate estimated as the ratio between speed and size of the vessel, considered shear rate, weekly doses of EPO and intradialytic hypertension as dependent variables. We used for statistics SPSS 15 and R-Comander. Univariate analysis was first performed by Chi2 test with risk analysis, mean comparison and multivariate binary logistic regression and multiple linear regression .

RESULTS

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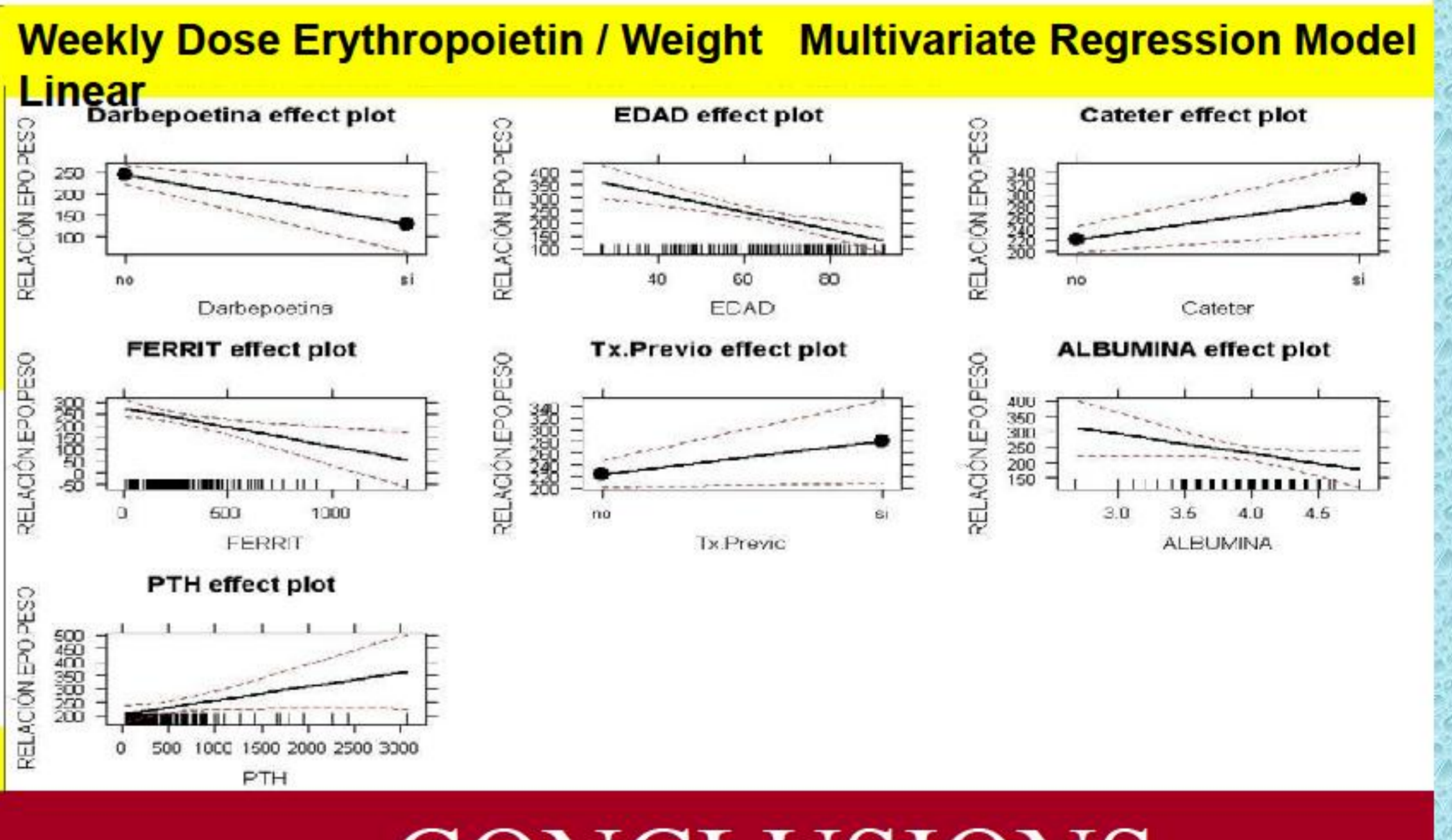


WEEKLY EPO U/Kg

Comparison Means	Rate Comparison
EPO SEMANAL <450 U/Kg	EPO SEMANAL <450 U/Kg
Medic. Previo [T. z1]	Medic. Previo [T. z1]
Hemoglobina (gr/dl)	Hemoglobina (%)
Albumina (gr/dl)	Kt/V
Bicalesina (mg/dl)	PTH (ng/ml)
Ferritina (ng/ml)	Ferritina (ng/ml)
Tx Anti hipertension	Edad

EPO weekly dose. Multivariate linear regression

Estimate	Std. Error	P value
(Intercept)	10777.607	1931.379 < 2e-16 ***
Tiempo HD	-67.370	21.110 0.001741 ***
Tx. Previo [T. z1]	10905.205	3113.807 0.000811 ***
FERRIT	-11.148	3.887 0.004754 **
Cinacalcet [T. z1]	3469.515	1645.624 0.036779 *
Catheter [T. z1]	4892.647	2452.638 0.040412 *
ACEI [T. z1]	2528.273	1669.764 0.133469



Intradialytic Hypertension. Multivariate Logistic Regression

	β	Std. Error	P Valor	OR
(Intercept)	3.8927	3.2222	0.2270	49.041
Tx. Previo [T. z1]	1.2925	0.7246	0.0745	3.641
HeparinaBPM [T. z1]	-0.3398	0.8730	0.6971	0.711
Kt/V	-0.5368	0.2720	0.0404 *	0.584
Hgb	-0.3846	1.2236	0.7544	0.680
EPO450 [T. mayor 450]	1.7190	0.6751	0.0109 *	5.578

- ## CONCLUSIONS
- 18,777 U / week EPO needs are a patient who has not even a month in Hemodialysis, which have not received a previous kidney transplant, which is not treated with Cinacalcet or ACE, which has placed a central venous catheter and has Ferritin level equal to the average of the other variables. p: 0.001
 - For each month of treatment in hemodialysis weekly erythropoietin dose decreased by 67 U / week. Equality of the other variables. p: 0.001
 - Having had previous renal transplantation increases nearly 11,000 U / week erythropoietin dose. Regarding the never transplanted to the other variables equal. p: 0.0005
 - For every increase of 1ng/ml Serum Ferritin level decreases by 11 U / week erythropoietin needs, controlling for other variables. p: 0.004
 - Cinacalcet treatment increases by 3,400 U / week Erythropoietin dose relative to those not receiving Cinacalcet, controlling for other variables. p: 0.03
 - Treatment with ACE inhibitors increases the dose of EPO / week at 2,500 U in relation to those not taking ACE inhibitors, controlling for other variables. p: 0.1
 - Having placed a central venous catheter for hemodialysis vascular access increased by almost 5,000 U / week erythropoietin dose in relation to those dialyzed through AV Fistula. p: 0.04