

ESTIMATION OF THE PROGRESSION RATE OF CHRONICAL RENAL FAILURE

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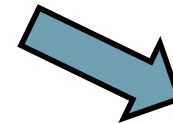
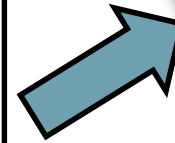


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Introduction:



There are several models used to estimate the progression of chronic renal failure (CRF).^(1,2)



¹Tangri N., Stevens L.A., Griffith J., *et al.* (2011) A predictive model for progression of chronic kidney disease to kidney failure, *JAMA* 305(15),1553-1559.

²Tangri N., Grams M.E., Levey A.S., *et al.* (2016) Multinational assessment of accuracy of equations for predicting risk of kidney failure: a meta-analysis, *JAMA* 315(2),164–174.

Aim

- The aim of this study is to identify the patients' risk of progression of the chronic failure in 2 and 5 years period.



Method -1-

- Nephrology clinic was chosen by random sampling method.
- Demographic and laboratory datas of the patients who are aged between 20-90, have different levels of CRF and applied to the clinic during the last month were analysed retrospectively.



Method -2-

- Glomerular filtration rate (GFR) of the patients were calculated by using Chronic Kidney Disease Epidemiology Collaboration method.
- Kidney Failure Risk Equation model, which is a quadrivariant model developed by Tangri et al. was used to calculate the risk rate of renal failure.
- **This was done in 5 risk categories:**
 - **for 2 years**, 0 to <2%, 2 to <6%, 6 to <10%, 10 to <20%, and $\geq 20\%$;
 - **for 5 years**, 0 to <5%, 5 to <15%, 15 to <25%, 25 to <50%, $\geq 50\%$.

RESULTS -1-



- It was detected that %64.51 of the patients were male,
- %24.19 were aged between 61-70,
- %77.4 were diagnosed with CRF,
- %17.7 were antihypertensive,
- %6.5 used oral antidiabetical medications and %22.6 used insulin hormon.
- Comorbid diseases of CRF were hypertension in %67.6, diabetes in %46.7 and genetic and immunological diseases in %29.
- %45.2 of the patients had stage III CRF. %59.7 of the patients applied to the nephrology clinic for control purposes.

RESULTS -2-



- Risk rate of renal failure in 2 years were %0-<2 for %43.9 of the patients.
- Risk rate of renal failure in 5 years were %≥20 for %2.4 of the patients.

Table 2. Kidney Failure Progression Risk Rates of the Patients (n:41)

Kidney Failure Progression Risk Rate for 2 Years (n=41)	n (%)
% 0-<2	29 (43.9)
% 2-<6	6 (9.1)
% 6-<10	3 (4.5)
%10-<20	1 (1.5)
% ≥20	2 (3.0)
Kidney Failure Progression Risk Rate for 5 Years (n=41)	n (%)
% 0-<5	26 (63.4)
% 5-<15	10 (24.4)
% 15-<25	2 (4.9)
%125-<50	2 (4.9)
% ≥50	1 (2.4)

RESULTS -3-



When the relationship between the CRF stage of patients and

laboratory results and blood pressure were analysed, it was detected that there was

a significant relationship between systolic blood pressure and parathormon, creatinin, BUN,

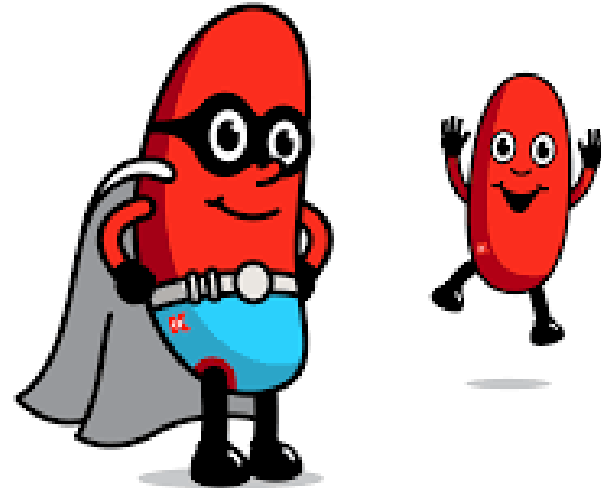
phosphorus, Hb, albumin/creatinin and eGFR ($p < 0.05$).

Table 3. Relation between the Phases of CKD and Laboratory Data and Blood Pressure

Variables	Stage 2		Stage 3		Stage 4		Stage 5		Kruskal Wallis H Testi	
	n	Mean Rank	n	Mean Rank	n	Mean Rank	n	Mean Rank	H	p
Parathormone (n=63)	4	13.50	29	22.83	18	39.89	12	48.50	24.39	0.000
BUN (n=66)	5	8.00	30	21.60	19	49.26	12	48.92	40.90	0.000
Creatinine (n=66)	5	9.10	30	20.08	19	44.63	12	59.58	51.29	0.000
Phosphor (n=63)	4	22.00	28	22.68	19	33.92	12	54.04	26.00	0.000
Calcium (n=65)	4	30.75	30	37.85	19	27.55	12	30.25	3.86	0.27
Potassium (n=66)	5	22.00	30	36.05	19	34.61	12	30.17	2.75	0.432
Hemoglobin (n=65)	5	54.80	29	41.95	19	25.79	12	13.71	28.42	0.000
Albumin/creatinine (n=41)	3	16.50	22	16.80	11	23.36	5	37.00	12.49	0.006
eGFR (n=66)	2	58.40	30	44.97	19	24.21	12	9.17	42.85	0.000
Systolic Blood Pressure (n=54)	4	15.38	28	29.11	17	21.47	5	48.70	14.27	0.003
Diastolic Blood Pressure (n=54)	4	24.88	28	27.95	17	23.85	5	39.50	3.96	0.266

Conclusion

- Most common comorbid diseases of CRF were HT and DM.
- BUN, creatinin, Hb, phosphorus, parathormon, albunim/creatinin and eGFR are the factors affecting the stage of CRF.
- Therefore, individual patient follow-ups by calculating the risk rate and education processes would be beneficial to decrease the incidence of renal failure.



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**THANK YOU
FOR YOUR ATTENTION**