THE EFFECT OF EXTRACT POMEGRANATE (Punica granatum) ON THE LEVELS OF SODIUM AND POTASSIUM IN THE BLOOD of WHITE RATS (Rattus norvegicus) WITH IMPAIRED NEPHROTOXICITY BY GENTAMYCIN-INDUCED

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ABSTRACT

This research was aimed to know the effect of pomegranate extract on the levels of sodium and potassium in the blood of white rats (Rattus norvegicus) with impaired renal function induced by gentamycin. Twenty four male rats 2-3 months old with 150-200 gram body weight were grouped into four different treatment for 15 days followed: P1 group as a control group treated with CMC Na 0,3%, P1  group treated with gentamycin and CMC Na 0,3%, P2 group treated with gentamycin and ellagic acid in CMC Na 0,3%, P3 group treated with gentamycin and pomegranate extract in CMC Na 0,3%. After fifteen days treatment, blood sample taken with intracardiac method. The levels of sodium and potassium in the blood were than measured using electrolyte analyzer with ion selective electrode method (ISE). The result showed that the mean and standard deviation of P0 sodium levels was 140,1667 ± 1,3291 mmol/L, P1 was 137,1667 ± 2,2286 mmol/L, P2 was 138,0000 ± 3,1622 mmol/L, P3 was 138,8333 ± 1,9407 mmol/L. While mean and standard deviation of P0 potassium levels was 5,0833 ± 0,3970 mmol/L, P1 was 6,8000 ± 2,0746 mmol/L, P2 was 6,8500 ± 3,9813 mmol/L, P3 was 5,2500 ± 0,5958 mmol/L. Based on the result of the analysis of variance (ANOVA) and Duncan test, sodium test showed P0 has the significant effect to P1 but not significant with P2 and P3 (p>0.05), and potassium test showed no significant result. The pomegranate treated group (P3) gave the best value on the levels of sodium and potassium in blood, it gave a good effect in preventing nephrotoxicity in white rat.

Key Words: gentamycin-induced, nephrotoxicity, pomegranate extract, potassium blood, sodium blood