THE EFFECT OF VITAMIN C TO TESTIS WEIGHT, NUMBERS OF LEYDIG CELLS, AND DIAMETER OF SEMINIFERUS TUBULES OF ADULT MALE MICE (*Mus Musculus* L) INDUCED BY MONOSODIUM GLUTAMATE

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Monosodium glutamate is commonly used as a food seasoning that has free radical effect in the body when the usage doses exceed normal range. The generated oxidative stress may effect male fertility by influencing spermatogenesis process. Vitamin C is one of antioxidants which is effective against free radical effects in the body.

This study aims to prove the effect of vitamin C to testis weight, numbers of Leydig cells, and diameter of seminiferus tubules of adult male mice induced by monosodium glutamate. This study uses a randomized controlled design.

This study used 25 adult male mices DD Webster strain as subject of this study, which were randomly divided into 5 groups: K(-) (given MSG 4mg/grBW), K(+) (given vitamin C 0.2 mg/grBW), P1 (given MSG 4 mg/grBW and vitamin C 0.07 mg/grBW), P2 (given MSG 4 mg/grBW and vitamin C 0.2 mg/grBW), P3 (given MSG 4 mg/grBW and vitamin C 0.6 mg/grBW) after 15 days of treatment, measurement on testis weight and histological measurement on numbers of Leydig cells and diameter of seminiferus tubules were taken. Data were analyzed by using one-way ANOVA test followed by post hoc analysis test with LSD method and Kruskal-Wallis test followed by post hoc analysis test with Mann-Whitney method.

The result showed the average testis weight in group K(+), K(-), P1, P2, and P3 respectively were 0.123±0.008; 0.092±0.008; 0.098±0.007; 0.110±0.007; 0.118±0.008 with p value = 0.000 in one way ANOVA test. Post hoc LSD analysis showed significant value in group K(+) with K(-), P1, P2; group K(-) with P2, P3, K(+); group P1 with P2, P3, K(+); group P2 with K(+), K(-), P1; and group P3 with K(-) dan P1.
The result showed the average numbers of Leydig cells in group K(+), K(-), P1, P2, and P3 respectively were 434±54.92; 248±81.42; 251±90.27; 299±47.70; 469±79.01 with p value = 0.000 in one way ANOVA test. Post hoc LSD analysis showed significant value in group K(+) with K(-), P1, P2; group K(-) with K(+) and P3; group P1 with P3 and K(+); group P2 with K(+), P3; and group P3 with K(-), P1, P3.

The result showed the average diameter of seminiferous tubules in group K(+), K(-), P1, P2, and P3 respectively were 64.06±0.66; 55.54±0.44; 59.33±6.93; 66.61±4.60; 64.80±3.87 with p value = 0.037 in Kruskal-Wallis test. Post hoc Mann-Whitney analysis showed significant value in group K(-) with P2, P3, K(+).

Based on this study, it can be concluded that vitamin C has effect to testis weight, numbers of Leydig cells, and diameter of seminiferous tubules of adult male mice induced by monosodium glutamate.

**Key words**: Monosodium glutamate, vitamin C, testis, testis weight, Leydig cell, diameter of seminiferous tubule, mice.