



The Effectiveness of the Flesh of Durian (*Durio zibethinus*) in Increasing Platelet Count on Balb/C Mice (*Mus musculus*): A Prospective Study

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Key words: Balb/C mice, flesh of durian, platelet count, administration, treatment

Abstract: This study aimed to determine the effectiveness of durian in increasing the platelet count of white mice. Pre and post-test design was used. Subjects were conditioned and randomly selected: 5 Balb/C mice each for group. Initial platelet count was done three days before administration of 1 mL blended durian on experimental group. The control group not administered was fed with the same pellet and water daily. After three consecutive days final platelet counts were obtained. Results showed notable increase in the platelet count from 187.000 (initial count) to 311.600 (final count) on Balb/C mice after ingesting durian flesh. The initial mean platelet count of mice before administration of the durian preparation is $iE = 187.200 \times 10 \text{ g L}^{-1}$. After 3 consecutive days of treatment, it significantly increased from $fE = 187.200 \times 10 \text{ g L}^{-1}$ to $iE = 311.600 \times 10 \text{ g L}^{-1}$. With a difference of $iE - fE = 124.400 \times 10 \text{ g L}^{-1}$ in the platelet reading, this represents the effectiveness of the Balb/C mice in increasing platelet count. This remarkable result goes to show that durian flesh is effective in increasing platelet count of mice. For future researchers, it is recommended that there is a need of increase in terms of dosage, days of administration, the number of test subjects, the use of other varieties of durian and as well as the other parts of durian fruit for effectiveness in the increase of platelet count^[1].

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Page No.: 36-38

Volume: 15, Issue 2, 2020

ISSN: 1816-3319

International Journal of Tropical Medicine

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INTRODUCTION

Dengue fever has become a global threat, since, the Second World War which is yet to be eradicated. It became a notable disease in the Philippines and was later renowned as dengue Hemorrhagic fever which is characterized by a decreased production of platelet cells. Currently, there is no specific drug to cure Dengue fever.

Rumors have been spread in Davao City, stating that durian flesh is effective in treating symptoms of the said disease. To prove this claim, the researchers have conducted this study.

Objective of the study: This study is devised to detect the effectiveness of durian in increasing the platelet count of white mice (Table 1). Specifically, the study intend to:

Table 1: Mean platelet counts ($\times 10^9 \text{ g L}^{-1}$) N^o Mice platelet count = 160.000-410.000 $\times 10^9 \text{ g L}^{-1}$

Treatments	i	f	i-f
Experimental (E)	187.200	311.600	124.400
Control (C)	17.2000	255.200	84.0000

Compare the platelet count of the subjects before and after administration of 1 mL/day of durian flesh on Balb/C mice in 3 days^[2].

Detect the effectiveness of ingesting durian flesh in increasing the platelet count on Balb/C mice for three days of durian flesh administration.

MATERIALS AND METHODS

“Pre” and “post” experimental design were used. Isogenic Balb-C mice were randomly selected and treated with the blended durian which is color yellow and smelly, 100 g of durian flesh was utilized and blended with 200 mL of drinking water in 5 min.

NGT was attached to the 1 mL of tuberculin syringe without the needle, 1 cm proximal to the connector was cut to avoid injuring the mice and the durian supplement was easily ingested by the test subjects.

With the dosage of 1 mL of blended durian using a needle free tuberculin syringe once a day at 6 pm for 3 consecutive days to detect the effectiveness of the durian treatment in increasing the platelet count. To compare the platelet count, initial platelet count of the control and experimental group prior the experimentation were assessed then repeated the platelet count analysis after one hour of feeding of the experimental group to detect if the treatment were effective. On obtaining the blood specimen, the tail of the mice were cut half centimeter from the distal part. The subject were assessed after cutting one half centimeter on the edge of the tail for any signs of abnormality and placed back to their respective cage, the subject studies and the control group were fed with pellets and 1 cap of drinking water three times a day with the following schedule, respectively 7 am, 12 noon and 8 pm. Platelet count analysis was done by medical technician^[3] (Table 1).

RESULTS AND DISCUSSION

The initial mean platelet count of the experimental groups before administration the durian preparation is $iE = 187.200 \times 10^9 \text{ g L}^{-1}$. After 3 consecutive days of treatment it significantly increased from $fE = 187.200 \times 10^9 \text{ g L}^{-1}$ into $iE = 311.600 \times 10^9 \text{ g L}^{-1}$.

With a difference of $iE - fE = 124.400 \times 10^9 \text{ g L}^{-1}$ in the platelet reading, this represents the effectiveness of the Balb/C mice in increasing platelet count (Fig. 1).

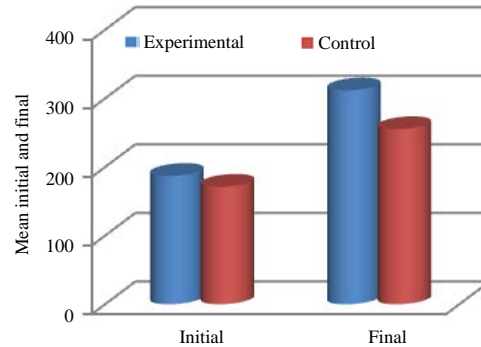


Fig. 1: Platelet count

CONCLUSION

Durian flesh preparation is effective in increasing platelet count on Balb/C mice. There is a notable increase in the platelet count from $187.000 \times 10^9 \text{ g L}^{-1}$ (initial count) to $311.600 \times 10^9 \text{ g L}^{-1}$ (final count) on Balb/C mice after ingesting durian flesh. This remarkable result goes to show that durian may influence the increase of platelet count of mice^[4,5].

RECOMMENDATION

The researcher used a standardized methods and random sampling to minimize errors. But for further study, the researchers recommend the following:

- Increase the dosage to administer $>1 \text{ mL/day}$ to the maximum tolerable dose using approximate lethal dose by single dose method
- Increase the number of test subjects >10 isogenic Balb/C mice to determine the reliability of the study
- Increase the duration of administration more than three days
- Use pure extract of durian
- Determine if there is a difference in the effectiveness of durian flesh preparation on male and female Balb/C mice as subjects
- Use subjects other than Balb/C mice to determine the effectiveness of durian flesh
- Use other types of durian
- Use and screen other parts of durian for effectiveness on increasing platelet count
- Determine the side effects or adverse effects of durian flesh administration

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