Medicinal role of pumpkin seeds on platelets counts in dengue fever treatment.

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ABSTRACT:
Objective: Assessment of pharmacological effect of Cucurbita pepo pumpkin seed in association to platelets count on healthy rabbits.
Methodology: By adhering to the regular principles for including and excluding rabbits in the study; thirty rabbits were selected for current study. Premeditated amounts of pumpkin seed powder were given at doses of 250 and 500 mg day-to-day for sixty days to the study groups. The blood samples were evaluated at the Diagnostic & Research laboratory PUMHS Shahid Benazirabad Hospital. Blood Complete Picture was done by Automated Analyzer. Records were statistically presented in groups as means by the t-test using SPSS version 22.
Results: When study group B and C were compared with control group A from day 0 to day 60 the mean platelet value in group B found to be very much statistically significant on day 30. Whereas they were statistically significant on day 15 and 45 as were compared to the control group. Subsequently, when group C was compared with the control group, statistical significance was observed on days 15 and 60. A progressive increase in all blood parameters was detected from 15 to 60 days.
Conclusion: As significant increase in platelet count was observed in group B and C as compared to control group A, pumpkin seed may be use as herb food as supplement to boost platelet count

Key words: Cucurbita Pepo, Dengue Fever, Medicinal Role, Platelets, Pumpkin Seeds, Rabbits.

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Introduction:

Dengue fever (mosquito borne disease) had in recent times spreading speedily to all over the world. Over 7.6 million dengue cases, including 3.4 million confirmed cases, over 16,000 severe cases, and over 3,000 fatalities, had been reported to WHO as of April 30, 2024. A noticeable rise in dengue incidence worldwide is observed over the past five years.[1] Dengue virus (DENV) infection is an important basis of illness and death in humid and subtropic parts of the world.[2,3]

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DENV infection can cause more illness and death than any other arthropod-borne virus. Dengue fever could become a global pandemic in the near future.[4] Dengue virus is transmitted through Aedes aegypti mosquito. The virus causes acute febrile illness.[2] It is characterized by high grade fever, severe headache, joints and muscles discomfort and rashes. Dengue fever can progress to more severe forms necessitating effective management strategies.[5] The infection is communicated thru the bite of diseased mosquito. Symptoms typically appear approximately 5 to 7 days after a mosquito bite to a healthy individual.[6] When antibodies from the initial infection are deactivated, minor infections with new serotypes might origin a more severe infection.[7,8] Platelets are flowing blood cells.[9] In normal situations, they do not intermingle with the undamaged walls of the blood vessels.[10] The platelets range normally varies between 150,000 and 350,000 / cm.[11] While there is deficiency of platelet count, blood clotting abnormality my develop.[12] Numerous studies on remedial plants, including pumpkin, have demonstrated their ability to increase blood parameters, including platelet counts, and boost the immune system in humans.[13] The exploration for new anti-dengue agents from phytochemical is supposed to be very nascent in the past.3 Cucurbits are a major and diverse group of cultivated plant species, and their seeds boast a wide range of medicinal properties.[14] Pumpkins are more resilient and less susceptible to spoilage, which is reflected in the quality of the extracted oil.[15] An important part of pumpkins is their seeds, which are low in fat and rich in protein, and filled with various classes of phytochemicals.[14]

Objective:

Keeping in view the fatal effects of dengue fever and lack of curative measures for it, the study planned for the analyzing the effects of pumpkin seed effects on platelets count.

Methodology:

This study was conducted on rabbits in the animal house of Peoples University of Medical & Health Sciences for Women, Nawabshah for the duration from Jan 2021 to Mar 2021.Thirty fit rabbits registered in the project, taking into account inclusion exclusion codes, for instance the typical age 16th to 24th months, and weight between 1.5 and 2.5 kg have similar gender and race. Rabbits having any illness, minors, underweight, and pregnant rabbits were excluded from the study. The rabbits divided into 3 groups viz A, B, C, with ten rabbits in every group. The group A was fed only with fresh hay and water. The groups B, C were day-to-day individually given 250 mg, 500 mg of pumpkin seed powder. The blood sample was collected of each rabbit. The first sample was designated day zero. Afterwards sample was taken at every two weeks on days 15, 30, 45, and 60. The blood sample was obtained by ear venipuncture and shifted to a tube having an anticoagulant EDTA for complete blood count. To test the samples, an automated analyzer was used. Data was analyzed by calculating mean and groups were compared using t-test. SPSS version 22.0 software used and p value as 0.05 was considered to be statistically significant.

Results:

The mean Platelet Count for group B stood greatly statistically significant on 30th day, while they were statistically significant on 15th and 45th day when compared to control group. Subsequently, when comparing group C to the control group, statistical significance difference was observed on 15th and 60th day. When relating further interpretations of the study group with the control group, they established to be statistically insignificant (Table 1). Figure 1 shows a graphical representation of these observations. The mean TLC value was higher at day 0 in the control group associated with both study group. Then a collective rise in TLC was observed in the study groups. A very significant rise was seen. Even though increase in total lymphocyte count was observed of C group, but it was not significant compared to the control group. This emphasizes the immune-regulating outcome of pumpkin seed (Table 2). Figure 2 reflect a graphic picture of these explanations.

Table No 1: Mean Platelet Count among control and treatment groups (n=30)

Day	Group = A (n10)	Group = B (n10)	Group = C (n10)
0	211,400	257,600	239,200
15th	202,300	262,100**	288,300ΔΔ
30th	204,900	308,800***	263,300
45th	226,200	308,000**	290,500
60th	215,700	319,900	323,400ΔΔ

***=Significant, ***=Highly Significant, ΔΔ=Very Highly Significant*

Table No 2: Mean total leucocyte counts among control and treatment groups (n=30)

Day	Group A (n10)	Group B (n10)	Group C (n10)
0	9,600	6,810*	8,600± NS
15th	9,730	7,800**	8,820 NS
30th	9,580	8,030*	8,950 NS
45th	10,330	8,950NS	8,810 NS
60th	10,170	8,870NS	9,580 NS

Discussion:

Herbal immune boosters have recently been considered due to several advantages such as enhanced therapeutic effects, reduced side effects, ease of access, and lesser prices.[16] Plant extracts are accomplished because they are affordable and safe for the human.[17] The pumpkin plant, known as Cucurbita pepo, has been familiar for its likely health benefits due to its ironic nutritional value and bioactive compounds.[18] Extracts resulting are considered for their properties and effects on growth, immune improvement, and disease prevention.[19]

In this study a non-significant raise in WBCs in control group was seen. While in study groups a significant rise in TLC count noticed. These annotations are consistent with the work of Lawal et al.[20] and Ifeanyl et al.[21] Youngabi et al.[22] examined the pumpkin seed effect on platelet count in mice and detected a rise in their count. During current study we also observed significant rise in platelet count among treatment group as compared to control. The above -mentioned explanations in learning highlight the protagonist of pumpkin seed in thrombocytopenic disorder such as the public dengue fever, where thrombocytopenia is a deadly consequence. These findings contradict the observations of Cruz et al.[23]

Conclusion:

Since pumpkin seeds are inexpensive, have excellent patient compliance, and virtually no harmful side effects, they could be used as an alternative to conventional ways to increase immunity and platelet count. However, before it may be used on a bigger scale, extensive human trials are advised.

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Authors' contribution	
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Aisha Asad Memon	Study design, References
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Habibullah Shaikh	Results, Data analysis, Discussion
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