The Effect of Biomedical Suture Material on IgE Levels in Canine Blood Indicating Allergic Reaction

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The purpose of this experiment was to study the effect of biomedical suture material on IgE levels in canine blood indicating allergic reaction. The hypothesis was If the sutures contain biomedical material, then the IgE levels will increase. The control in this experiment was the synthetic suture material such as Polyglactin 910 suture material (PGLA sutures) or polyglycolic acid suture material (vicryl). The constants in this experiment were the animal breed, the window of time between the insertion of sutures and extraction of the blood sample, and the number of trials for each suture type. The independent variable in this experiment was whether or not biomedical suture material was used. The dependent variable in this experiment were the IgE levels. This experiment was conducted by collecting 60 blood samples from canines that received sutures from a neuter or spay (30 catgut and 30 synthetic) and testing the IgE levels with an ELISA test.The results in this experiment were that the catgut trials had higher IgE levels and the hypothesis was supported. Based on the results, it was concluded that the catgut sutures cause higher IgE levels in canine blood, and therefore indicate allergic reaction. Recommendations for improving this experiment are to measure IgE levels in the dog's blood before the sutures are used and compare them to the IgE levels after the dogs receive sutures, and to test duplicates when performing the ELISA test. This would provide more certainty when deciding the cause of the elevated IgE levels. Recommendations for further study would be using this data and the information it provides about IgE levels and the timeline they follow when an allergic reaction occurs to create a snaptest that measures IgE levels in canine blood.