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Studies in Acetylphenylhydrazine Anemia in Dogs.*

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Anemia was produced in 5 adult dogs by subcutaneous injection of acetylphenylhydrazine (pyrodin). The amounts injected were calculated in terms of red cell volume as determined from hematocrit and plasma volume readings and varied from 40 mg. to 100 mg. per 100 cc. of red cells, given in single or divided doses. The dogs were fed a standard diet in order to minimize possible dietary effects.

Some degree of anemia, coincident with an increase in the icteric index, was present in all cases at the end of 24 hours. The anemia becomes most marked in 5 to 9 days after the first injection, the red cell and Hb determinations at this time showing values of from 33 to 67% of the original levels. Single injections produce a similar degree but a more rapid onset of the anemia than do divided doses of the same amount. The disappearance of the anemia is gradual, recovery beginning 12 to 16 days after the first injection. Approximately normal levels are reached in 3 to 5 weeks after injection. The percentage of reticulocytes increases to approximately double the normal values in 2 or 3 days after the pyrodin is injected and usually remains at this level. The first indication of recovery from the anemia is usually preceded by a further, sudden marked rise, the value reaching 33% in one experiment. The corpuscular volume shows a tendency to increase and to remain high even after the anemia has disappeared. The same is true of the resistance of the red cells which increases gradually and is greatest at the height of the anemia. The behavior of the white cells is irregular. The total is increased from 50 to 100% at the height of the anemia. No consistent changes occur in the differential or in the number of platelets. The Van den Bergh reaction was negative in all cases as was spectroscopic examination for methemoglobin.

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