

The effect of fibrin stabilizing factor (F.XIII) on healing of bone defects in normal and uncontrolled diabetic rats

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Abstract. This study was undertaken to examine the effect of fibrin stabilizing factor (F.XIII) on healing of bone defects in normal and uncontrolled diabetic rats. Eighty rats were divided into two groups: group I (diabetic) and group II (non-diabetic) (40 rats each). Diabetes was induced in group I using streptozotocin. Both groups were divided into two subgroups, control and experimental (20 rats each). Bone defect was created in the mandible. Rats in the experimental subgroups were injected with F.XIII, while those of the control groups were injected with saline (F.XIII solvent). Animals were killed at varying intervals and tissue sections stained with hematoxyline and eosin and Van-Gieson stains were examined. Differences in collagen deposition and bone formation were compared in both control and experimental groups. Collagen deposition was evident and appeared more oriented in diabetic rats treated with F.XIII, and signs of bone deposition started in the experimental group earlier than in the control group. On the other hand, F.XIII did not significantly affect healing in non-diabetic rats. It is concluded from these results that F.XIII may enhance early stages of bone healing in uncontrolled diabetic rats.

Key words: fibrin stabilizing factor (Factor XIII); bone healing; healing in diabetes; induction of diabetes.

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