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## The effect of thymoquinone extract of black seeds towards socket new blood vessels formation process after extraction in diabetic-induced rats

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**Statement of the Problem:** Hyperglycemia elevates the advanced glycation end product (AGEs) formation which induced complication after tooth extraction such as endothelial dysfunction. Thymoquinone (Tq), the active compound of black seeds (*Nigella sativa* L.), has been known to stimulates new blood vessels activity also for its anti-diabetic properties. The purpose of the study is to determine the effect of Tq towards socket new blood vessels formation process after extraction in diabetic-induced rats.

**Methodology & Theoretical Orientation:** 27 male rats were injected STZ intravenously and rats with blood glucose level  $\geq 250$  mg/dl were divided into three groups (K, P1, P2). Rats were given Aquadest (K), Tq (P1) and Metformin (P1). On 7th day after treatment, its lower first left molar teeth was extracted. About 3 samples from each group were sacrificed on 3<sup>rd</sup>, 7<sup>th</sup> and 10<sup>th</sup> day after extraction. HE and Immunohistochemical staining was used to observe the new blood vessels formation.

**Conclusion & Significance:** We found the lowest blood glucose in P1 group on 10<sup>th</sup> day after extraction. The new blood vessel formation in P1 showed the progressive formation significantly compared to P2 and K group ( $p < 0.05$ ). We conclude that Tq treatment may improve the socket new blood vessels formation process and prevent the complication.

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