The suppression of oxidative and inflammatory pathway ameliorate the reproductive damage in diabetic induced male rats

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Outline

- Introduction
- Rosuvastatin ameliorates diabetes-induced reproductive damage via suppression of oxidative stress and inflammatory
- Curcumin enhances cellular stress and suppresses oxidative stress and inflammatory
- Exogenous oxytocin ameliorates diabetes-induced reproductive damage
- Conclusion

Abstract

近年來糖尿病患人數不斷攀升，且糖尿病會引起許多併發症，其中男性糖尿病患者約一半人口有因氧化壓力造成的生殖損傷問題，因此如何預防及保護是目前許多人重視的議題。從藥物的例子，羅蘇伐他汀 (rosuvastatin, RUV) 除了具有降膽固醇作用外，還具有抗氧化作用和抗發炎特性，因此在此研究中想要知道 RUV 在糖尿病中是否可以減緩氧化壓力而保護糖尿病雄性大鼠生殖功用。接下來為天然物質的例子，薑黃素 (curcumin, CUR)，過去已證實可抗糖尿病，但是在糖尿病條件下對於胰島相關的氧化壓力了解卻不多。最後則是從人體既有物質為例，催產素 (oxytocin, OXY) 在人體中通常是刺激子宮收縮、影響分娩及哺乳，目前已知催產素有抗氧化的作用，作者想知道催產素是否可以藉由其抗氧化的作用而減緩糖尿病之雄性大鼠不良生殖功能。在皆使用 Wistar 大鼠，並用鏈脲佐黴素 (STZ, 65 mg/kg, i.p.) 誘導糖尿病之下，結果顯示此三種物質皆能減少過氧化物質，以及增加抗氧化酵素活性，RUV 改善了精子數量和運動性，減少睪丸發炎、細胞 iNOS、NF-κB 和 caspase-3 的表達，CUR 減少促炎因子 TNF-α、IL1-β 和 IFN-γ，OXY 則是在光學顯微鏡下發現可減少睪丸組織病理學損傷問題。因此最後可知此三種物質皆能作為糖尿病氧化壓力生殖損傷下之有效保護劑，但是由於藥物仍然有副作用，以及現代人改為喜愛追求天然食療之考慮，未來趨勢可能是期望以天然物質改善糖尿病生殖問題。

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