



RCSI

RCSI Bahrain

RSS PROJECT SUMMARY YEAR 2017

RCSI DEVELOPING HEALTHCARE LEADERS WHO MAKE A DIFFERENCE WORLDWIDE

Project Title	Diabetes and Middle ear pathology
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Project Summary	
<p>Diabetes mellitus is a heterogeneous metabolic disorder characterized by hyperglycemia resulting from defective insulin secretion, resistance to insulin action or both. Some degree of hearing impairment affects over two-thirds of diabetic adults; about twofold higher than that of the nondiabetic population, yet little is known about the characteristics of those experiencing this disability. There are three basic types of hearing loss depending on which area of the auditory system is damaged: conductive, sensorineural and mixed hearing loss. There is a wide range of data on the connection between sensorineural loss and diabetes. These changes include morphological changes in the number of cochlea receptors among diabetic patients. However a connection between conductive hearing loss and diabetes is still not clear. Studies are rare and relate diabetes mellitus to the thickening of the tympanic membrane which causes stiffness of middle ear. It is possible that hyperglycemia may lead into damage of small blood vessels in the ear in the same way it causes retinopathy and damage of kidney blood vessels. Other mechanisms include reduced immunity in diabetes mellitus and middle ear infection and degenerative changes and necrosis of the small ear bones. The aim of this study is to investigate the hearing conductive loss in streptozotocin-induced diabetes mellitus in rats. This research will investigate especially the prevalence and possible causes of conductive hearing loss that are caused by hyperglycemia.</p> <p>The project will depend on the availability of animals.</p>	

Subjected to Ethics Approval	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
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Primary References	Tuz M, Dogru H, Yasan H, Doner F, Yarıktas M. J Laryngol Otol, 2006;120(7):E22. Wackvm PA, Linthicum FH. Am J Otol. 1986;7:176-182
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