



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

**Sudan University of Science and Technology**

**Collage of Graduate Studies**

**Serum Gondotropins Levels Among Sudanese  
Men with Infertility**

مستويات الجونادوتروبين في مصل دم الرجال السودانيين الذين  
يعانون من العقم

*A dissertation submitted for partial fulfillment for the requirement of  
M.Sc Degree in Medical Laboratory science- Clinical chemistry*

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بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

قال تعالى:

يَرْفَعُ اللّٰهُ الَّذِیْنَ اٰمَنُوْا مِنْكُمْ وَالَّذِیْنَ اٰتَوْا الْعِلْمَ

دَرَجٰتٍ وَاللّٰهُ بِمَا تَعْمَلُوْنَ خَبِیْرٌ ﴿۱۱﴾

سورة المجادلة الآية 11

# **Dedication**

**To The soul of my mother**

**To my Father**

**To my sisters and grandmother**

**To my Teachers and friends**

# Acknowledgments

*First, I thank the Almighty Allah, for enabling me to reach this level of the academic ladder. It is all because of His power mercy and grace.*

*This thesis would not have been possible without the guidance and the help of several individuals who in one way or another contributed and extended their valuable assistance in the preparation and completion of this thesis.*

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## Abstract

**Background:** Infertility is the inability of a sexually active, non-contracepting couple to achieve pregnancy in one year. The causes for a male infertility include: Congenital factors, Acquired urogenital abnormalities, Urogenital tract infections, Increased scrotal temperature, Endocrine disturbances, Systemic diseases.

**Materials and Methods:** In a cross-sectional study population 150 males randomly were enrolled in this study, (75 males as control and 75 males as cases). Semen fluid was collected to measure sperm by (CASA) and serum was collected to measure gonadotropins (FSH, LH) by ELISA technique.

**Results:** In both Azoospermia and oligospermia groups the mean concentrations of (FSH) was significantly increased compared to control group ( $18.1 \pm 9.1$  m Iu/mL) ( $14.4 \pm 7.08$  m Iu/mL) vs ( $6.4 \pm 7.03$  m Iu/mL) with p-value (0.00) (0.00) respectively. Also the mean concentrations of (LH) in Oligospermia and Azoospermia groups was significantly increased compared to control group ( $14.1 \pm 9.4$  m Iu/mL) ( $11.1 \pm 7.1$  m Iu/mL) vs ( $6.4 \pm 7.03$  m Iu/mL) with p-value (0.02) (0.03) respectively.

**Conclusion:** The study concluded that there is an inverse association between serum level of (FSH, LH) and low sperm count. This could contribute to the pathogenesis of male infertility.

## المستخلص

خليفه الدراسه :العقم هو عدم القدره علي النشاط الجنسي للزوجين غير المستخدمين لموانع الحمل لتحقيق الحمل في سنه واحده واسباب العقم عند الذكور :عوامل خلقيه،التهابات الجهاز البولي التناسلي المكتسبه ،زيادة درجه حراره الصفن ، اضطرابات الغدد الصماء ، والامراض المزمنه.

الطرق والمواد: اجريت دراسه مستعرضه ل 150 ذكر عشوائيا تم تسجيلهم في هذه الدراسه وصنفوا اعتمادا علي نتيجته السائل المنوي الي مجموعتين ، مجموعه طبيعيه تحليل السائل المنوي 75 ومجموعه غير طبيعيه السائل المنوي 75 مع قياس الهرمون المنبه للجريب والهرمون اللوتيني .

النتائج : مستويات الهرمون المنبه للجريب والهرمون اللوتيني في زياده عند الذكور الذين لديهم قله في الحيوانات المنويه والذكور الذين ليس لديهم حيوانات منويه بالمقارنه مع الذكور الذين لديهم السائل المنوي طبيعي ( $p < 0.05$ ) قيمه احتماليه

اوضحت الدراسه ان هنالك علاقه عكسيه بين مستويات الهرمون المنبه للجريب مع عدد ومجموع الحيوانات المنويه مع قيم احتماليه (0.00) (0.00) علي التوالي.

كما اوضحت ايضا ان هنالك علاقه عكسيه بين مستويات الهرمون اللوتيني مع عدد ومجموع الحيوانات المنويه مع قيم احتماليه (0.02) (0.03) علي التوالي .

النتائج النهائي :خلصت الدراسه ان هناك علاقه عكسيه بين الهرمون المنبه للجريب, والهرمون اللوتيني مع عدد الحيوانات المنويه وتركيزها .

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