

# Dedication

This work is dedicated to ...  
my lovely family,  
my friends,  
and to my teachers.

# Acknowledgments

*I wish to express my sincere thanks and gratitude to my supervisor Dr. Badr El- Din Hassan El- Abid for his expert supervision, wise guide, generous help and support.*

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## **Abstract**

A prospective study conducted during the period of April to October 2007, compared serum levels of total cholesterol, triglyceride, LDL- cholesterol, of 50 apparently healthy cigarette smokers as a test group, and 30 apparently healthy non smokers as a control group, who were chosen randomly from the teaching staff and students of the University of Science and Technology.

The serum levels of total cholesterol triglycerides and LDL- cholesterol were all highly significantly raised ( $p < 0.01$ ) in the test group (smokers) Men  $\pm$  SD for controls versus non cigarette smokers. ( $189.7 \pm 18.8$ mg/dl versus  $138.8 \pm 21.4$ ); for serum total cholesterol. ( $198.6 \pm 23.8$  mg/dl versus  $155.3 \pm 22.1$ ); for serum triglyceride. ( $143.4 \pm 18$  mg/dl versus  $77.7 \pm 16$ ); for LDL – cholesterol.

The mean level of HDL – cholesterol was found to be significantly reduced in the test group compared to the control group. ( $p < 0.01$ ). ( $56.8 \pm 12$  versus  $46.5 \pm 8.8$  mg/dl); for serum HDL – cholesterol.

More over cigarette smoking increased the level of serum total cholesterol, serum triglyceride, serum LDL and there a positive correlation with both, the number of cigarettes smoked per day and duration of smoking in years.

In this study, it is concluded that, cigarette smoking is associated with hypercholestromia, and hyper triglyceridaemia with increase risk of for atherosclerosis and coronary heart disease.

## ملخص الدراسة

أجريت هذه الدراسة التوقعية خلال الفترة من أبريل - أكتوبر 2007م. حيث تمت مقارنة مستويات الدهون المختلفة في مصل الدم (الكوليسترول، ثلاثي التجلسرايد، البروتينات الشحمية ذات الكثافة العالية وكذلك ذات الكثافة المنخفضة). عند 50 من المدخنين الأصحاء مع 30 من الأصحاء (غير المدخنين) كمجموعة تحكم (مجموعة ضابطة). تم اختيار المدخنين والمجموعة الضابطة عشوائيا من أعضاء هيئة التدريس والطلاب بجامعة العلوم والتقانة. كان هنالك ارتفاع ملحوظ وذو دلالة معنوية عالية حيث كان الاحتمال الإحصائي للمقارنة أقل من 0.01 في كل من المستويات الوسيطة للكوليسترول، ثلاثي التجلسرايد، البروتينات الشحمية ذات الكثافة العالية وكذلك ذات الكثافة المنخفضة وذلك عند مقارنة المستوى الوسطي عند المدخنين مقارنة بمجموعة التحكم وكانت النتائج كالآتي:

(المستوى الوسطي  $\pm$  الانحراف المعياري عند المجموعة الضابطة مقارنة بمجموعة المدخنين).

(189  $\pm$  18.1 في مقابل 134.8  $\pm$  21.4 ملجرام/ديسلتر) بالنسبة

لمصل الدم للكوليسترول الكلي.

(198.6  $\pm$  23.8 في مقابل 155.3  $\pm$  22.1 ملجرام/ديسلتر ) بالنسبة لمصل الدم ثلاثي جلسرايد.

(143.4  $\pm$  18 في مقابل 77.3  $\pm$  16 ملجرام/ديسلتر) بالنسبة لمصل الدم للبروتينات الداهنة ذات الكثافة المنخفضة.

المستويات لمصل الدم للبروتينات الداهنة ذات الكثافة العالية كانت منخفضة انخفاضاً ملحوظاً عند المدخنين وكانت ذات دلالة معنوية عالية حيث كان الاحتمال الإحصائي للمقارنة أقل من 0.01.

(46.5  $\pm$  8.8 في مقابل 56.8  $\pm$  12 ملجرام/ديسلتر) بالنسبة لمصل الدم للبروتينات الداهنة ذات الكثافة العالية.

من المعلومات المتحصل عليها في هذه الدراسة، اختتم إلى أن التدخين يؤثر بزيادة معدل الكوليسترول الكلي والترايجليسرايد والبروتينات الداهنة ذات الكثافة المنخفضة، ويؤثر بانخفاض معدل البروتينات الداهنة ذات الكثافة العالية وهذا مرتبط بعلاقة وثيقة بعدد السجائر المدخنة في اليوم الواحد وبمدة التدخين بالسنين.

وعليه تلخص هذه الدراسة على أن التدخين أثر واضح في زيادة مستويات الدهون (الكوليسترول) بالدم مما يجعل المدخنين أكثر عرضة بالإصابة بأمراض القلب وضيق وتصلب الشرايين.

## List of abbreviations

Apo

Apolipoprotein

C°

Degree centigrade

|              |                                    |
|--------------|------------------------------------|
| Chol         | Cholesterol                        |
| FA           | Fatty Acids                        |
| FFA          | Free fatty acids                   |
| HDL          | High density lipoprotein           |
| IDH          | Schemic heart disease              |
| IDL          | Intermediate density lipoproteins  |
| LDL          | low density lipoprotein            |
| LCAT         | lecithin cholesterol acyl transfer |
| NFFA         | Non esterified free fatty acids    |
| P            | probability value                  |
| Pl           | phosphorlipids                     |
| r            | correlation coefficient            |
| rpm          | resolution per minute              |
| TG           | Triglycerides                      |
| U\ml         | Unit per mill                      |
| U\l          | Unit per liter                     |
| $\mu$ ,mol\l | Micro mol per liter                |
| VLDL         | Very low density lipoprotein       |

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