DEDICATION

To

My father

. . . My mother

. . . My brothers and sisters

. . . My husband

To My lover Talia

To my uncle Abdel Hafiez

And

To My friends

ACKNOWLEDGEMENT

Thanks to *Allah* for enabling me to get to where I am today, to have guided me and bestowing his mercy and blessings upon me and

my family.I humbly raise my hands and say *Al-Hamdu-Lillah* to Allah for everything.

I would like to express my deep and sincere gratitude to my supervisor, Dr. Ishraga Ahmed Fargalla, Head of the Department of pathology, faculty of medicine, University of Alzaiem Alazhari. Her unlimited knowledge and her logical way of thinking have been of great value to me. Her understanding, encouraging and personal guidance have provided a good base for this thesis. Last but not least her detailed and constructive comments provided important support throughout this work.

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ABSTRACT

This retrospective study was conducted in histopathology laboratories in Bahry hospital and fideal hospital, and laboratory of Dr. Ishraga Ahamed Fargalla, during the period from April to August 2011. This study aimed to detect the different types of mucins in adenocarcinoma of the large bowel. 67specimens from adenocarcinoma of large bowel were stained by six histopathological special stains to detect types of mucins and to correlate histological types and grade of the tumor with mucin type.the Haematoxylin and Eosin (H&E) for general morphology, and periodic acid schiff's reagent for neutral mucin and N-acetyl sialomucin(enzyme labile),variable for sulfated and negative for O-acetylsialomucin(enzyme resistant),and Phenylhydrazine-PAS stain which is negative for neutral mucin and positive for other periodate-reactive mucins, and combined alcian blue-PAS stain which is differentiated between acid and neutral mucin, and combined aldehyde fuchsin-alcian blue stain to differentiate between sulfated and carboxylated mucin, and alcian blue stain PH1for weakly sulfated mucin. The study concluded that: The type of mucin found in this study, carboxylated sialomucin Oacetyle was the majority type 22 (32.80%), followed by carboxylated sialomucin N acetyl form 19 (28.40%), neutral mucin and carboxylated sialomucin were found in 12 (17.90%), and neutral and sulfated mucin in 6 (9.0%), while sulfated mucin in 4 cases(6.0%) and neutral and acid mucin in 4 cases also.The histological types of tumor are mucinous adenocarcinoma, non mucinous adenocarcinoma and signet ring type, distributed as 9(13.4%), 52(77.6%), 6(9.0%) respectively. The histological grade of tumor distributed as well differentiated 17(25.40%), moderately differentiated 38(56.70%) and poorly differentiated 12(17.90%). Finally we recommended conducting new studies contributing larger sample size

and using more specific and sensitive techniques to identify different types and suptypes of mucins.

الخلاصة

أجريت هذه الدراسه بأخذ عينات من مختبر أمراض الأنسجة والخلايا بمستشفي فضيل ومستشفي بحري ومختبر د. اشراقة أحمد فرج الله في الفتره من ابريل حتي أغسطس 2011. هدفت الدراسه إلي الكشف عن نوع المادة المخاطية الميوسين الموجودة في سرطان الأمعاء الغليظة . تم جمع 67 عينه من عينات محفوظة مسبقا في شمع البرافين مأخوذة من مرضي سرطان الامعاء. تم صبغ العينات النسيجيه بست طرق مختلفة لمعرفة نوع الكاربوهيدرات الموجود : طريقة الهيماتوكسيلين و الإيوسين لإظهار الشكل العام و التغيرات النسيجيه وطريقة حمض البريوديك شيف لاظهار كل انواع الميوسين وطريقة البيريدك شيف مع الفينايل هايدروزاين للتأكد من نوع الميوسن المتعادل وطريقة البريوديك شيف مع الالسين بلو للتفريق بين الميوسين المتعادل والميوسين الحمضي وطريقة البريوديك شيف مع الالدهيد فوكسين للتفريق بين انواع الميوسين الحمضي السلفيت والكربوكزوليت وطريقة الالسين بلو بمقياس هيدروجيني 1 لمعرفة الميوسين الحمضي من نوع السلفيت. أظهر التقييم النسيجي للذين شملتهم الدراسه النتائج التاليه: 22 (32.8%) ميوسين حمضي كاربوكسيلي(و) اسيتايل و 19 (28.4%) ميوسين حمضي كاربوكسيلي (ن) اسيتايل و 12 (17.9%) ميوسين حمضي متعادل مع ميوسين حمضي كاربوكسيلي و 6 (9.0%) ميوسين حمضي متعادل مع ميوسين حمضي سلفيتي و 4 (6.0%) ميوسين حمضي سلفيتي و 4 (6.0%) ميوسين حمضي متعادل. ووجد ان نسبة انواع سرطان المعاء الغليظة كالاتي السرطان المخاطي 9(13.4%), والغير مخاطي 52 (77.6%), والنوع الحلقي 6 (9.0%). كما وجد ان السرطان واضح التفريق بنسبة 17(25.40%), والمتوسط التفريق بنسبة 38 (56.70%), والفقير التفريق بنسبة 12 (17.90%) . واوصت الدراسة بإجراء دراسات جديدة تشمل عدد اكبر من العينات وباستخدام تقنيات أكثر دقة وحساسية للتعرف على أنواع مختلفة من الميوسين وانواعه.

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List of abbreviations

Abbreviation	Form
CRC	Colorectal carcinoma
~~GI~~	Gastrointestinal
H&E	Haematoxylin and Eosin
PAS	Periodic acid Schiff**'s**
AB	Alcian blue
SPSS	Statistical Package for Social Software
NCR	National Cancer Registry
WCRF	World Cancer Research Fund
AICR	American Institute for Cancer Research
NSAIDs	Non-steroidal anti-inflammatory drugs
FAP	Familiar adenomatous polyposis
APC	Adenomatous polyposis coli
HNPCC	Hereditary nonpolyposis colorectal cancer
GISTs	Gastro Intestinal Stromal Tumours
CEA	Carcinoembryonic antigen
GAGs	Glycosaminoglycans
CEC	Critical electrolyte concentration
HCL	Hydrochloric acid
KOH	Potasium hydroxide
PAT	Periodic acid-thionin
HID-AB	High-iron-diamine-Alcian blue
GOS	Galactose oxidase-Schiff
GCM	Goblet cell-type much
NANA	N-acetylneuraminic acid
SCM	Surface coat-type mucin