الآيـــة

أعوذ بالله من الشيطان الرجيم

بسم الله الرحمن الرحيم

(وَإِن يَمْسَسْكَ اللَّهُ بِضُرٍّ فَلَا كَاشِفَ لَهُ إِلَّا هُوَ ۖ وَإِن يَمْسَسْكَ بِخَيْرٍ فَهُوَ عَلَىٰ كُلِّ شَيْءٍ قَدِيرٌ)

صدق الله العظيم

سورة الأنعام-الآية 17

Dedication

To the patients of cervical cancer

To my father for supporting
me

To my mother for taking good care of
me

To my family members for being beside
me

To my friends for sharing life with
me

Acknowledgment

First of all thank Allah for giving me strength me and faith to reach this level.

I give infinite thanks to my supervisor Dr Abu Algasim Abass Awad Alkareem for being the light that show me the way and help me out to make this to research.

I would like to thank of all staff in department of histopathology and cytology of Ribat University Hospital specially Dr Ahmed Abdelbaddie Mohamed who had always being there with helping hands and all support and motivation throughout the period of my work.

I would like to express thank fullness to Dr Ebtisam Mahmoud to her sharing me to complete this work.

I would like to thank of all staff of department of histopathology in Soba University Hospital and Medical Military Hospital for providing samples.

Finally special thanks to my brother Ammar Naghmeldeen for his support.

Abstract

This is a descriptive retrospective study carried out in Ribat university hospital, Soba university hospital and the Medical military hospital during the period from January to June 2014. This study aimed to determine of the expression of Ki67 and Her2 in cervical tumors.

Forty five samples were randomly selected from patients with cervical tumors, patients identification data were obtained from files records. Most patients in our study were between 27 year and 85 year, there were 18 (40%) patients were in less than 50 year and 27 (60%) patients were in more than 50 year. We find 10 (22%) samples were benign tumors while 35 (78%) samples were malignant tumors. The malignant tumors included 29(83%) samples were squamous cell carcinoma and remaining 6.0 (17%) samples were adenocarcinoma. From this samples 14 (31%) samples were Ki67 positive and 31 (69%) samples were Ki67 negative , also the results showed 15 (33%) samples Her2 positive and 30 (67%) samples were Her2 negative by using immunohistochemical technique, all positive samples were malignant tumors, 14 (40%) samples were Ki67 positive and 15 (43%) samples were Ki67 negative this sample were squamous cell carcinoma and no result found of Ki67 expression for adenocarcinoma and there were 10 (29%) samples Her2 positive while 19 (54%) samples were Her2 negative this result in squamous cell carcinoma and there were 5.0 (14%) samples Her2 positive and 1.0 (3.0%) samples Her2 negative in adenocarcinoma, and there were no any expression of Ki67 and Her2 in benign tumors, this result means Ki67 and Her2 expression offered significant different between Ki67 and Her2 and cervical tumors and significant different between Ki67 and Her2 expression with the type of malignant tumors and also found the significant different between Ki67 and histopathological grade while there were no significant different between Her2 expression and the histopathological grade.

ملخص الدراسة

أجريت هذه الدراسة الوصفية المرجعية في مستشفي الرباط الجامعي, ومستشفي سوبا الجامعي, ومستشفي السلاح الطبي في الفترة مابين شهر يناير الى يونيو 2014, هدفت هذه الدراسة الي تحديد انتشار ظهور الصبغة المناعية لمستقبلات ال كي اي 67 ومستقبلات النمو الجلدية الانسانية في اورام عنق الرحم.

تم أخذ 45 عينة نسيجية عشوائيا من المرضى المصابات باورام عنق الرحم, تم أخذ معلومات المرضى من الملفات المسجلة للمرضى, معظم المريضات في دراستنا كن بين 25سنة الي 85 سنة, ولقد وجد أن 18 (40%) مريضة كن اقل من 50 سنة و27 (60%) مريضة كن اكثر من 50 سنة. وجد ان 10 عينات اورام حميدة, بينما 35(78%) عينة كانت اورام خبيثة, تضمنت 29 (83%) عينة كانت خلية حرشفية سرطانية وتبقي 6 (17%) عينة ورم غدي سرطاني.

من هذه العينات وجد ان 14(31%) عينة كانت كي اي 67 ايجابية و31(69%) عينة كانت كي اي67 سلبية, وايضا اظهرت النتائج 15 (33%) عينة كانت مستقبلات النمو الجلدية الانسانية ايجابية و 30(67%) كانت مستقبلات النمو الانسانية سلبية وذلك باستخدام تقنية كيمياء النسيج المناعية.

كل العينات الايجابية كانت اورام خبيثة, 14(40%) عينة كانت كي اي67 ايجابية و15(43%) عينة كي اي67 سلبية هذه النتائج كانت خلية حرشفية سرطانية ولا توجد اي نتائج لوجود ال كي اي67 لورم غدي سرطاني, وجدت 10(29%) عينات مستقبلات النمو الجلدية الانسانية ايجابية بينما 19(54%) عينة كانت مستقبلات النمو الجلدية الانسانية سلبية كانوا خلية حرشفية سرطانية , وجدت 5.0(14%) عينة مستقبلات النمو الجلدية الانسانية ايجابية و 1.0(3.0%) عينة مستقبلات النمو الجلدية الانسانية سلبية كانت ورم غدي سرطاني , هذه النتائج تعني أن ظهور مستقبلات ال كي اي67 و مستقبلات النمو الجلدية الانسانية تعطي فرق معنوي مع اورام عنق الرحم, كما يوجد فرق معنوي بين ال كي اي67 ومستقبلات النمو الجلدية الانسانية مع نوع الاورام الخبيثة, كما يوجد فرق معنوي بين ظهور مستقبلات ال كي اي67ودرجة تمايزالنسيج المريض بينما لا يوجد فرق معنوي بين ظهور مستقبلات النمو الجلدية الانسانية ودرجة تمايز النسيج المريض.

Abbreviations

CIN: Cervical Intraepithelial Neoplasia.

FIGO: International Federation of Gynecology and Obstetrics.

G1phase: Gap1 phase.

HER2: Human Epidermal growth factor Receptor type2.

HPV: Human Papilloma Virus.

HSV: Herpes Simplex Virus.

IARC: International Agency Research on Cancer.

LLETZ: Large Loop Excision of Transformation Zone.

Pap test: papanicolaue test.

S. phase: Synthesis Phase.

RICK: Radiation and Isotope Center in Khartoum.

NCI-UG: National Cancer Institute of University of Gazira.

Contents

الآيـــة	I
Dedication	II
Acknowledgment	III
Abstract English	IV
Abstract Arabic	V
Abbreviations	VI
Contents	VII
List of tables	XI
Chapter one	
1.1: Introduction	1
1.2: Objectives	3
1.2.1 : General objectives	3
1.2.2: Specific objectives	3
Chapter two	
2: Literature review	4
2.1: Scientific background	4
2.1.1: Anatomy of cervix	4
2.2: Inflammatory disorder	4
2.2.1: Atypia of repair	4
2.2.2: Cervicitis	5
2.2.3: Endometrosis	5
2.3: Tumors of cervix	5

2.3.1: Benign tumors	5
2.3.1.1: Endocervical polyps	5
2.3.1.2: Inclusion cyst	5
2.3.1.3: Other tumor like lesion	6
2.3.2: Cervical intraepithelial neoplasia (CIN)	6
2.3.3: Invasive carcinoma of cervix	6
2.4: Risk factors	7
2.4.1: Human papilloma virus (HPV)	7
2.4.2: Smoking	7
2.4.3: Parity	8
2.4.4: Immunosupression	8
2.4.5: Other factors	8
2.4.5.1: Socioeconomic status	8
2.4.5.2: Sexually transmitted infection	8
2.4.5.3: Oral contraceptive use	9
2.5: Diagnosis	9
2.5.1: Pap smear	9
2.5.2: Colposcopy	9
2.5.3: Biopsy	9
2.5.4: Large loop excision of the transformation zone	10
2.5.5: Cone biopsy	10
2.6: Staging of cervical cancer	10
2.7: Prognostic factors in cervical cancer	11

2.8: Treatment of cervical cancer	11
2.8.1: Surgery	11
2.8.2: Radiotherapy	12
2.8.3: Chemotherapy	12
2.8.4: Chemo radiation	12
2.9: Epidemiology of cervical cancer	12
2.10: Immunohistochemical technique	13
2.11: Her2 marker	14
2.12: Ki67 marker	14
Chapter three	
3: Material and method	17
3.1: Material	17
3.2: Methodology	17
3.2.1: Study design	17
3.2.2: Study samples	17
3.2.3: Study area	17
3.2.4: Tissue processing	17
3.2.4.1: Immunohistochemical staining	17
3.2.5: Ethical consideration	18
3.2.6: Result interpretation	18
3.2.7: Statistical analysis	18
Chapter four	
4: Results:	19

Chapter five	
5:Discussion	27
Chapter six	
6: Conclusion and recommendation	30
References	31
Appendixes	34

List of Tables		
Table (4.1)	Distribution of the study samples by histopathological diagnosis	21
Table (4.2)	Distribution of age among the study samples	22
Table (4.3)	Expression of Ki67 and Her2 among the study samples	23
Table (4.4)	Correlation between Ki67 and Her2 expression and study samples	24
Table (4.5)	Correlation between expression of Ki67 and Her2 expression and type of malignant tumors	25
Tables (4.6)	Correlation between expression of Ki67 and Her2 and histopathological grade	26