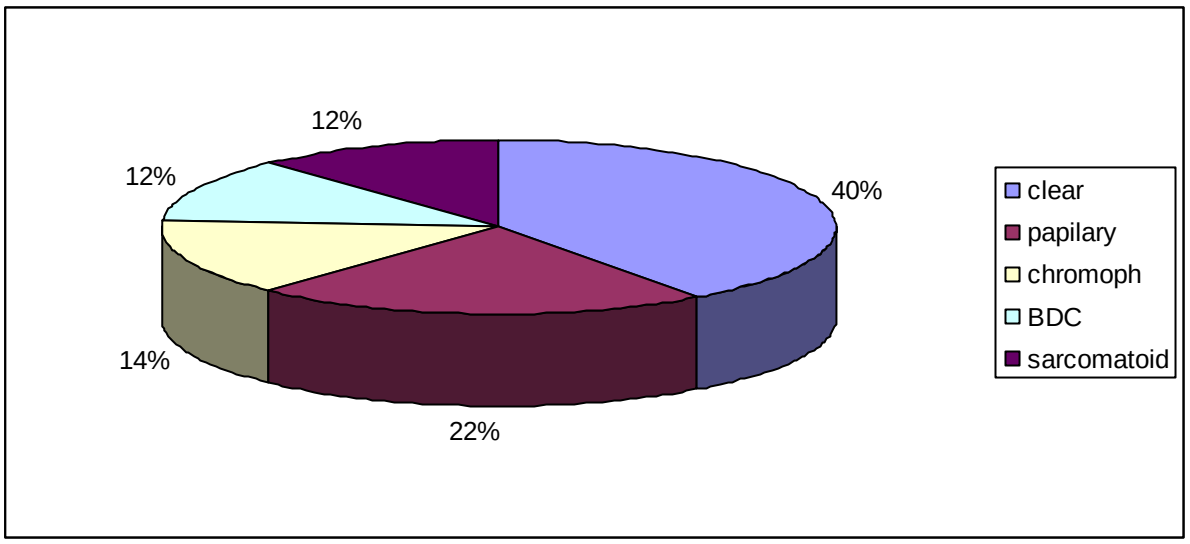
Result

This study included 50 selected cases of renal cell carcinoma (RCC) in addition to 6 cases of normal kidney tissue , taken as control .Among 50 studied cases, 20 cases (40%) clear cell RCC, 11 cases (22%) papillary RCC,7 cases (14 %) chromophobe , 6 cases (12%) Bellini duct carcinoma (BDC)and 6 cases (12%) sarcomatoid type.

Table (8) Classification of the studied RCC cases according to histopathological type.

Type	No of cases	%
Clear	20	40
Papillary	11	22
Chromophobe	7	14
BDC	6	12
Sarcomatoid	6	12
Total	50	100



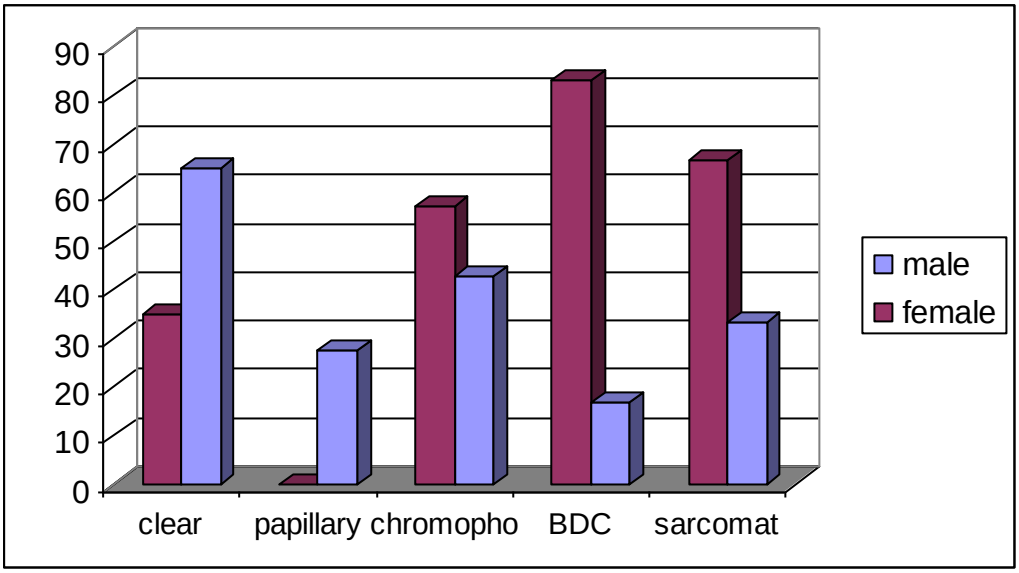
***Graph (1)* Classification of the studied RCC cases according to histopathological type.**

Relationship between histopathological type and, sex of patients:

This study recorded that 72.7% of papillary RCC, 57.1% of chromophobe ,88.3% of BDC and 66,7% 0f sarcomatoid types were males , while 65% of clear RCC were females. There was an insignificant correlation between histopathological type and sex of patients. P value > 0.05.

Table (9) ***Relationship between histopathological type and, sex of patients***

Type	sex			
	female		male	
	No	%	No	%
Clear	13	65	7	35
papillary	3	27.3	8	72.7
Chromophobe	3	42.9	4	57.1
BDC	1	16.7	5	88.3
Sarcomatoid	2	33.3	4	66.7
Total	22	44	28	56



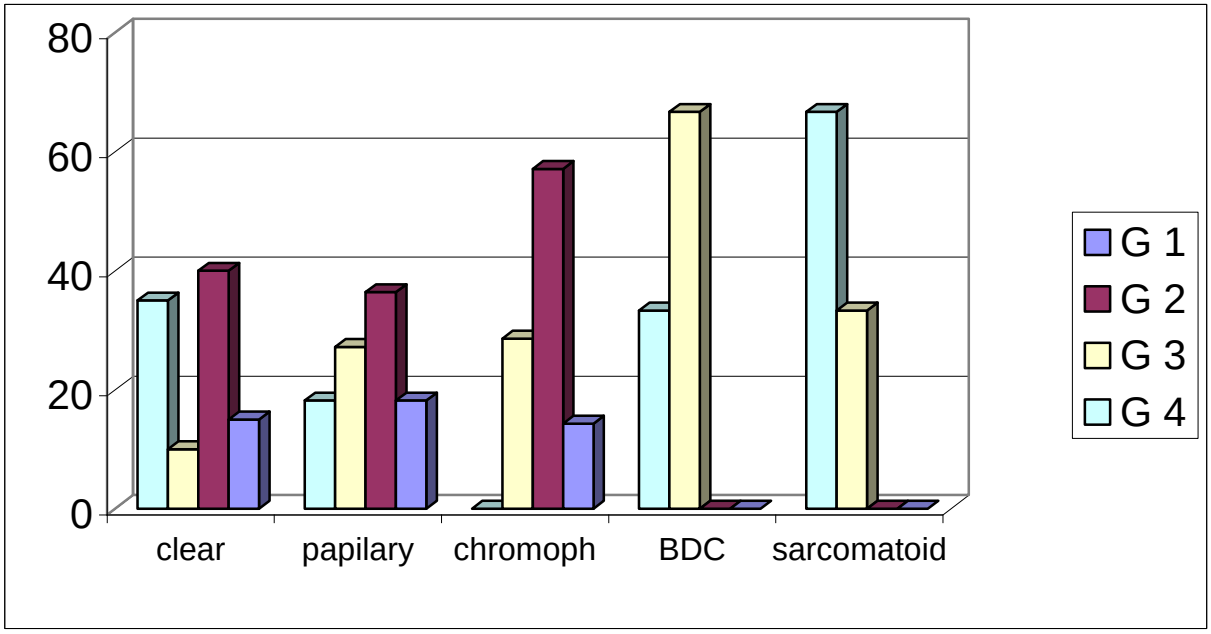
Graph (2) ***Relationship between histopathological type and, sex of patients:***

Relationship between histopathological type and the nuclear grade of tumors:

Cases of RCC were graded according to the Furhman grading system into 4 grades . Out of 50 studied cases , 6 cases (12%) were grade 1 , 16 cases (32%) were grade 2 , 13 cases (26%) were grade 3 and 15 cases (30%) were grade 4. All of BDC and sarcomatoid cases (100%) were of high grade (G3&G4), while 71.4% of chromophobe RCC, 55 % clear RCC and 54,6% of papillary RCC were low grade (G1&G2). So there was a statistically significant correlation between histopathological type and grade of tumors. P value <0,05.

Table (10) ***Relationship between histopathological type and grade of tumors:***

Histopathological type	N0 of cases	Histopathological grade							
		G1		G2		G3		G4	
		No	%	No	%	No	%	No	%
Clear	20	3	15	8	40	2	10	7	35
Papillary	11	2	18.1	4	36.5	3	27.3	2	18.1
chromophobe	7	1	14.3	4	57.1	2	28.6	0	0
BDC	6	0	0	0	0	4	66.7	2	33.3
sarcomatoid	6	0	0	0	0	2	33.3	4	66.7
Total	50	6	12	16	32	13	26	15	30



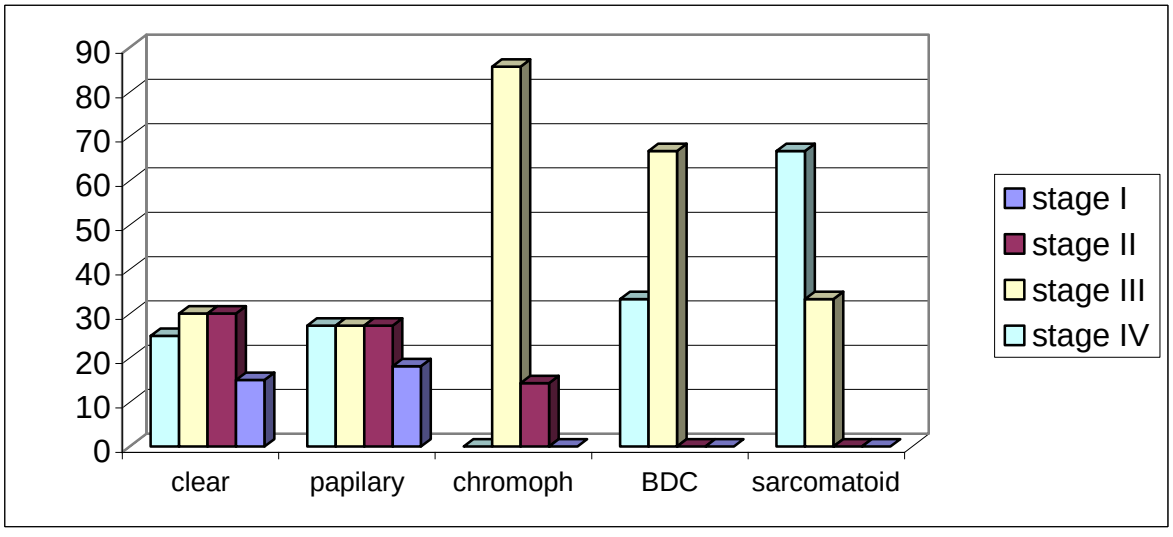
Graph (3) ***Relationship between histopathological type and grade of tumors.***

Classification of cases according to TNM stage in relation to histopathological type of malignancy:

In this study , tumor staging was done according to TNM staging system (UICC 2002). Out of 50 studied cases ,5 cases (10%) were stage I , 10 cases (20%) were stage II , 21 cases (42%) were stage III and 14 cases (28%) were stage IV. All cases of BDC , sarcomatoid and 55% of clear cRCC were of advanced stage (III & IV) .85.7% of chromophobe RCC were belonged to stage III .A significant correlation between RCC types and the TNM stage was detected. P value <0,05.

Table (11) **Relationship between histopathological type and the stage of tumors**

Histopathological type	N0 of cases	Stage							
		I		II		III		IV	
		No	%	No	%	No	%	No	%
Clear	20	3	15	6	30	6	30	5	25
Papillary	11	2	18.1	3	27.3	3	27.3	3	27.3
chromophob	7	0	0	1	14.3	6	85.7	0	0
BDC	3	0	0	0	0	4	66.7	2	33.3
srcomatoid	4	0	0	0	0	2	33.3	4	66.7
Total	50	5	10	10	20	21	42	14	28



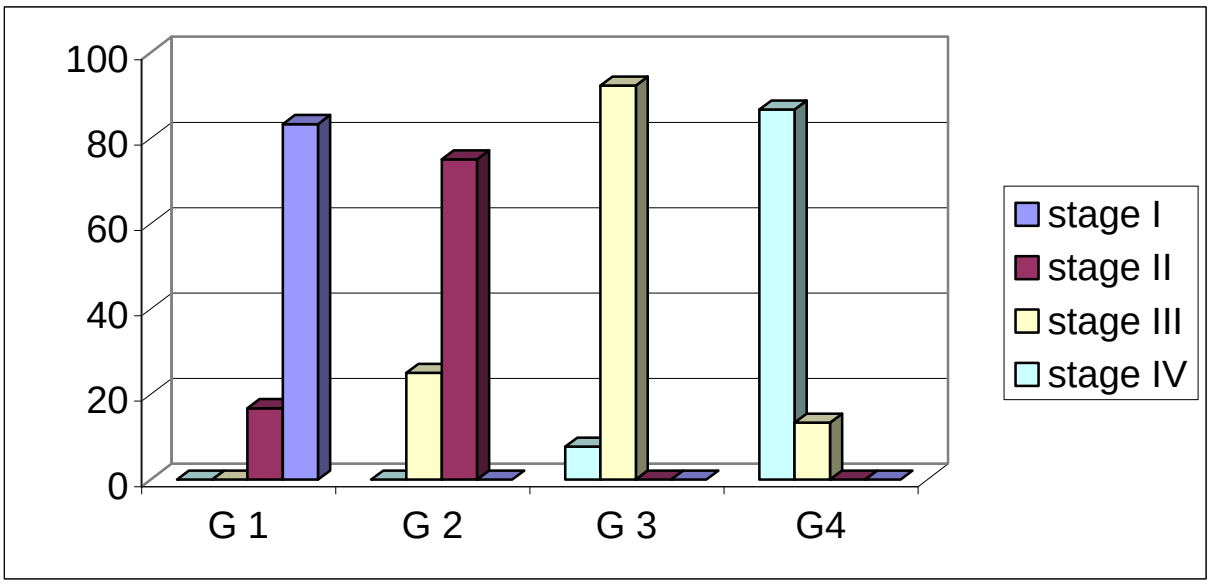
Graph** (4) **Relation between histopathological type and the stage of tumors.

***Relationship between the histopathological grade of tumor and TNM stage*:**

This result recorded that (83.3%) of grade 1were belonged to stage I, 75 % of grade 2 were belonged to stage II , 92.3% of grade 3 were belonged to stage III and 86.7% of grade 4 were belonged to stage IV. There was a statistically positive significant correlation between the grade and the stage of tumors,. The RCC had higher nuclear grade, concurrently having advanced stage . *P value (=< 0.05)*

Table (12) ***Relationship between histopathological grade of tumor and TNM stage***

Grade	N0 of cases	Stage							
		Stage I		Stage II		Stage III		Stage IV	
		No	%	No	%	No	%	No	%
G1	6	5	83.3	1	16.7	0	0	0	0
G2	16	0	0	9	75	7	25	0	0
G3	13	0	0	0	0	12	92.3	1	7.7
G4	15	0	0	0	0	2	13.3	13	86.7
Total	50	5	10	10	20	21	42	14	28



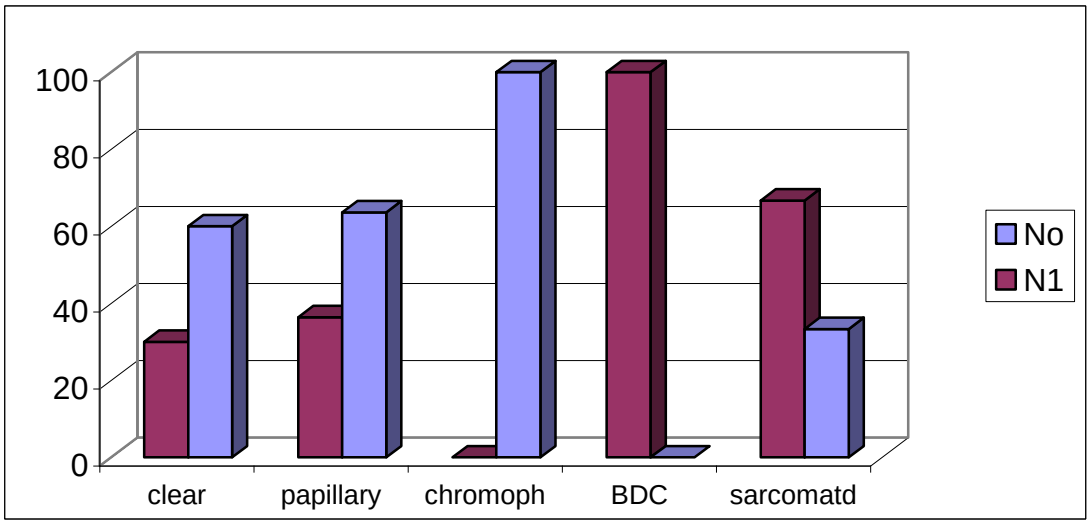
Graph (5) ***Relationship of histopathological grade of tumor to TNM stage***.

Relationship between histopathological type of malignant kidney tumors and lymph node metastasis:

Among 50 studied cases, 28 cases (56%) had no lymph node metastases and 22 cases (44%) showed lymph node metastases. All cases of chromophobe (100%) , 60% of clearcRCC type and 63.6% of papillary type showed no lymph node spread. All cases of BDC and 66.7% of sarcomatoid showed lymph node spread. There was a statistically significant correlation between histopathological type of RCC cases and lymph nodes status. *P value*<0,05.

Table (13) ***Relationship between histopathological type of tumors and lymph nodes metastasis***

Histological Type	No of cases	Lymph node state			
		No		N1	
		No	%	No	%
Clear type	20	12	60	8	40
Papillary	11	7	63.6	4	36.4
Chromophobe	7	7	100	0	0
BDC	6	0	0	6	100
Sarcomatoid	6	2	33.3	4	66.7
Total	50	28	56	22	44



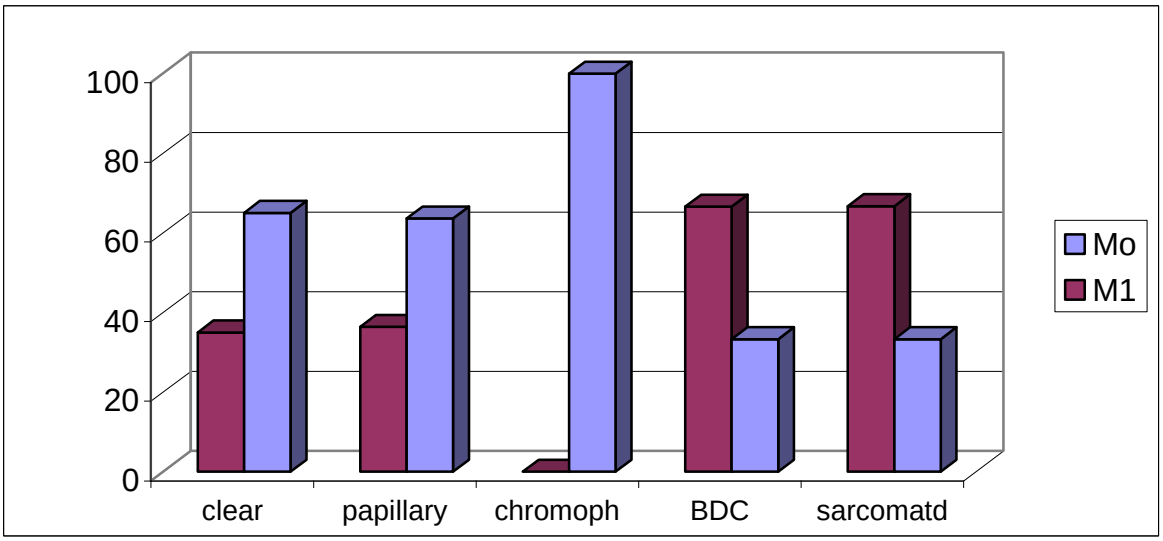
Graph (6) Relationship between histopathological type of tumors and lymph nodes metastasis.

Relationship between histopathological type of tumors and distant metastasis:

Among 50 studied cases, 31 cases (62%) had no distant spread and 19 cases (38%) showed distant metastases .All cases of chromophobe (100%) , 65% of clearcRCC type and 63.6% of papillary type showed no distant metastases, while 66.7% of BDC and 66.7% of sarcomatoid cases had distant metastases. This was a statistically significant correlation between histopathological type of tumors and distant metastasis. P value < 0.05

Table (14) **Relationship between *histopathological type of tumors and distant metastasis***

Histological Type	No of cases	Distant metastases			
		Mo		M1	
		No	%	No	%
Clear type	20	13	65	7	35
Papillary	11	7	63.6	4	36.4
Chromophobe	7	7	100	0	0
BDC	6	2	33.3	4	66.7
Sarcomatoid	6	2	33.3	4	66.7
Total	50	31	62	19	38



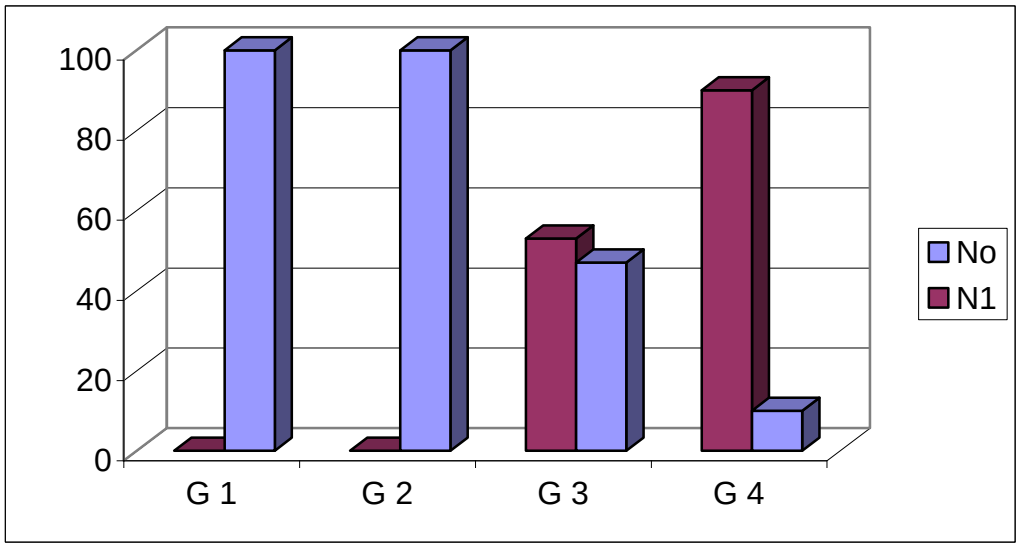
Graph **(** 7**)** ***Relation between histopathological type of tumors and distant metastasis***.

Relationship between the grade of malignant kidney tumors and lymph node metastasis:

All cases of grade 1 & grade 2(100%) showed no lymph node spread, while 54.5% of grade 3 and 93.3% of grade 4cases showed lymph node spread. So a significant difference was noted between the lower nuclear grade cases which showed no lymph node metastasis and the higher nuclear grade cases ,showing lymph node spread ,P value = < 0.05

Table (15)***: Relationship between grade of tumors and LN metastasis:***

Grade	No of cases	N0		N1	
		No	%	No	%
G1	6	6	100	0	0
G2	16	16	100	0	0
G3	13	5	45.5	8	54.5
G4	15	1	6.7	14	93.3
Total	50	31	62	19	38



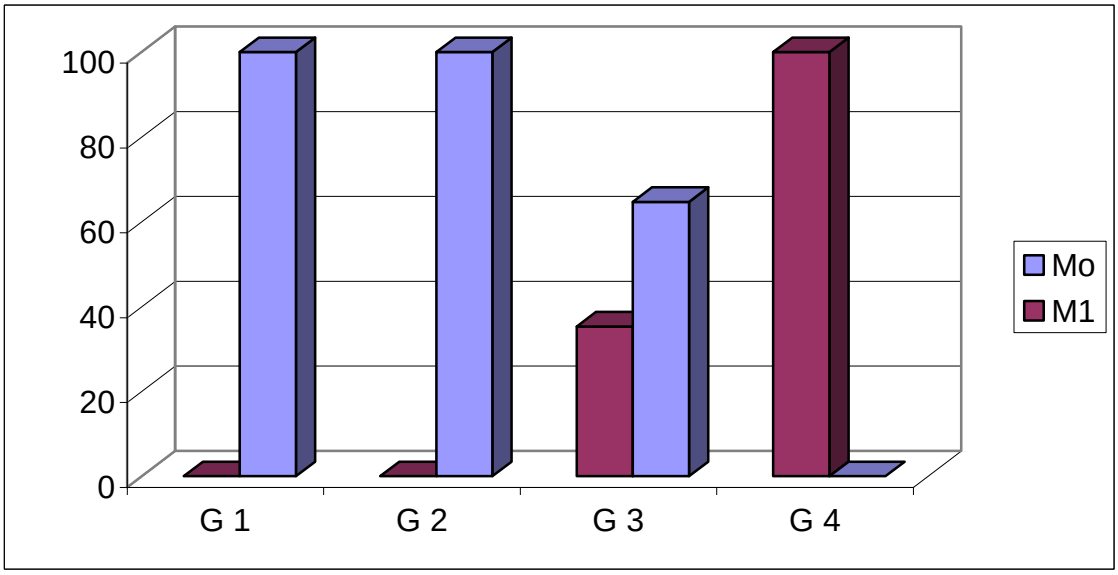
Graph (8) ***Relationship between grade of malignant kidney tumors and LN metastasis.***

Relationship between grade of of malignant kidney tumors and state of distant metastasis:

All cases of grade 1 and grade 2(100%) and (69.2%)of grade 3 had no distant metastases , while all of G4 cases (100%) were with distant metastases. There was a statistically significant positive correlation between nuclear grade of tumor and distant metastasis .P value= < 0.05. The lower nuclear grade cases showed no distant metastases, while cases of RCC with high nuclear grade tend to have distant metastasis .

Table (16) ***Relationship between grade of differentiation of malignant kidney tumors to state of distant metastasis:***

G	No of cases	M0		M1	
		No	%	No	%
G1	6	6	100	0	0
G2	16	16	100	0	0
G3	13	9	69.2	4	30.8
G4	15	0	0	15	100
Total	50	31	62	19	38



Graph (9) ***Relation of grade tumors to state of distant metastasis.***

MUC-1

- The control group:

All 6 cases ,containing apparently normal kidney tissue, MUC 1 was expressed in the epithelial cells of distal convoluted tubules and collecting tubules with polarized apical distribution .The remainder of tissue was negatively stained .

- The malignant group

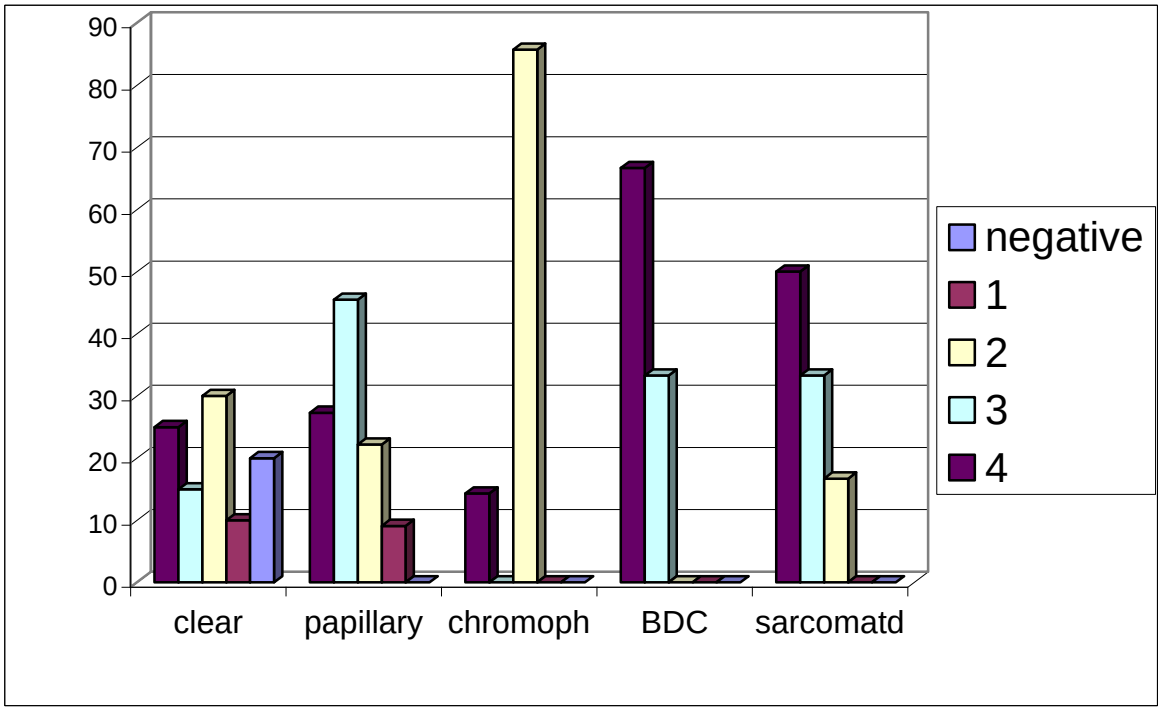
Relationship between histological type and MUC-1 score:

Out of 50 studied cases, 4 cases (8%) were negative stained , 4 cases (8%) showed score 1 , 18 cases (36%) showed score 2, 8 cases (16%) showed score 3 and 16 cases (34%) showed score 4.Although 60 % of ccRCC , 63.6% of papillary type and 85.7% of chromophobe RCC had lower MUC-1 score (-ve or 1& 2) in one hand , and all cases of BDC and 83.3% of sarcomatoid type recorded high MUC-1 score (3, 4) on the other hand , but there was an insignificant correlation between the score of staining and histological type *P value >0.05.*

Table (17): ***Relationship between histological type and MUC-1 score***

Type	No of cases	Score									
		1		2		3		4		negative	
		No	%	No	%	No	%	No	%	No	%
Clear	20	2	10	6	30	3	15	5	25	4	20
papillary	11	2	18.1	5	45.5	1	9.1	3	27.3	0	0
Chromophob	7	0	0	6	85.7	0	0	1	14.3	0	0
BDC	6	0	0	0	0	2	33.3	4	66.7	0	0
Sarcomatoid	6	0	0	1	16.7	2	33.3	3	50	0	0
Total	50	4	8	18	36	8	16	16	34	4	8

Negative = <10% of tumor cells are positive
1 = 10-25% of tumor cells are positive
2 =26-50% of tumor cells are positive
3 =51-75% of tumor cells are positive
4 =>75% of tumor cells are positive



Graph* (10) *Relationship between histological type and MUC-1 score

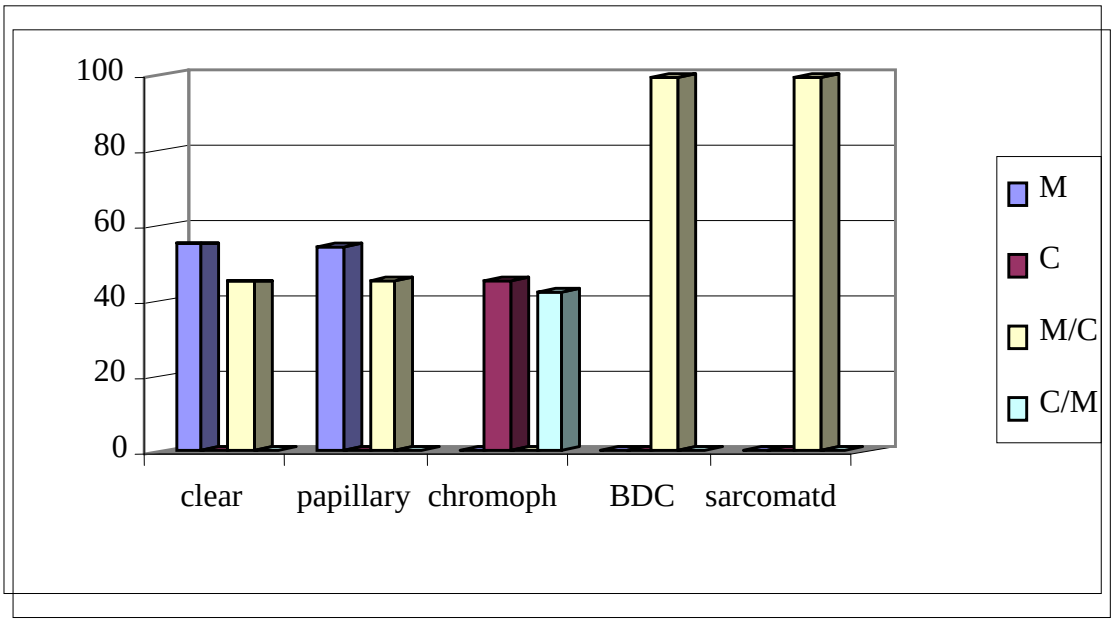
***Relationship between the histopathological type and pattern of MUC 1 expression*:**

MUC -1 is characterized by heterogeneous expression, Out of 50 studied cases . 17 cases(34%) had pure membranous pattern (M), 4 cases(8%) had pure cytoplasmic pattern (C) , 26 cases(52%) showed mixed pattern (M/C) and 3 cases (3%) showed mixed pattern (C/M) . It was noticed 55% of ccRCC and 54.4% of papillary type showed (M) pattern and 57.5% of chromophobe RCC cases revealed (C) pattern. All of BDC and sarcomatoid type (100%) showed circumferential membranous mixed pattern with additional cytoplasmic staining.(M/C). There was a statistically significant correlation between type and pattern of MUC 1 expression, especially (M) and (M/C) patterns. *,P value <0. 05*

Table (18) ***Relationship between type and pattern of MUC 1 expression*:**

Type	No of cases	Pattern of expression							
		M		C		M/C		C/M	
		no	%	no	0%	no	%	no	%
Clear	20	11	55	0	0	9	45	0	0
papillary	11	6	54.5	0	0	5	45.5	0	0
Chromophobe	7	0	0	4	57.1	0	0	3	42.9
BDC	6	0	0	0	0	6	100	0	0
Sarcomatoid	6	0	0	0	0	6	100	0	0
Total	50	17	34	4	8	26	52	3	6

M = purely membranous staining with apical polarity.
C =purely cytoplasmic staining
M/C= circumferential membranous with additional cytoplasmic staining.
C/M= cytoplasmic staining with additional membranous.



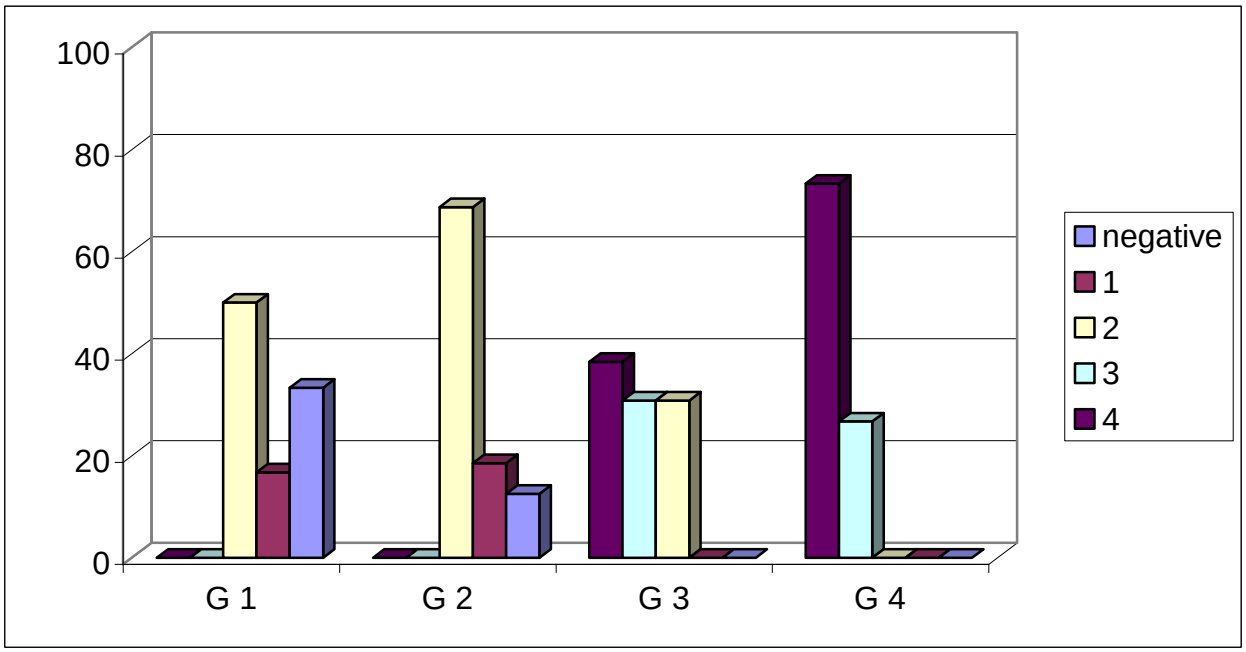
Graph (11) ***Relationship between type and pattern of MUC 1 expression*:**

Relationship between the Score of MUC-1 expression and the nuclear grade of malignant kidney tumors:

From this table, it was noticed that , there was a statistically significant correlation between MUC-1 score and grade of malignant kidney tumors. All cases of low grade (G1&G2) recorded lower MUC-1 score (-ve , 1, 2), classified as following: negatively staining were detected in 33.3% of G 1 and 12.5% of G 2 , score 1 was recorded in 16.7% of G1 and 18.8% of G2 , and 50 % of G1 and 68.7 of G2 were detected at score 2 . In the contrast ,All cases of grade 4 and 69.2% of grade 3 recorded higher score (3,4). So the lower nuclear grade cases had lower MUC-1 score level, comparing the higher nuclear grade had higher scoring. P value <0,05.

Table (19) Relationship between The Score of MUC-1 expression and grade of tumors:

Grade	No of cases	Score									
		1		2		3		4		negative	
		No	%	No	%	No	%	No	%	No	%
G1	6	1	16.7	3	50	0	0	0	0	2	33.3
G2	16	3	18.8	11	68.7	0	0	0	0	2	12.5
G3	13	0	0	4	30.8	4	30.8	5	38.4	0	0
G4	15	0	0	0	0	4	26.7	11	73.3	0	0
Total	50	4	8	18	36	8	16	16	34	4	8



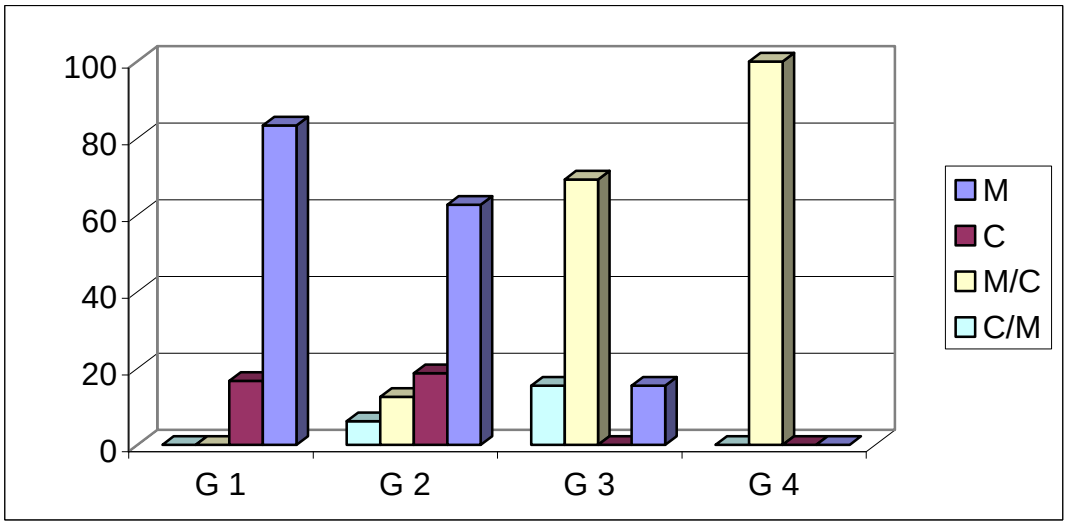
Graph** (12) **Relationship between The Score of MUC-1 expression and grade of tumors.

Relationship between The pattern of MUC-1 expression and nuclear grade of malignant kidney tumors:

As regard to the pattern, the pure pattern was observed in all cases of grade 1 and 81.3% of grade 2 ,classified as following: the (M) was found in (83.3%) of grade 1 and 62.6% of grade 2 . All of grade 4 (100%) and (69.2 %)of grade 3 showed mixed pattern with predominantly membranous staining (M/C) . There was a statistically significant correlation between The pattern of MUC-1 expression and grade of tumors. The lower nuclear grade cases showed purely staining pattern(membranous or cytoplasmic), in the contrast, the higher nuclear grade showed mixed pattern especially with membranous predominant *P value <0,05*

Table (20) Relationship between The pattern of MUC-1 expression and grade of malignant kidney tumors:

Grade	No of cases	Pattern of expression							
		M		C		M/C		C/M	
		No	%	No	0%	No	%	No	%
G1	6	5	83.3	1	16.7	0	0	0	0
G2	16	10	62.6	3	18.7	2	12.5	1	6.2
G3	13	2	15.4	0	0	9	69.2	2	15.4
G4	15	0	0	0	0	15	100	0	0
Total	50	17	34	4	8	26	52	3	6



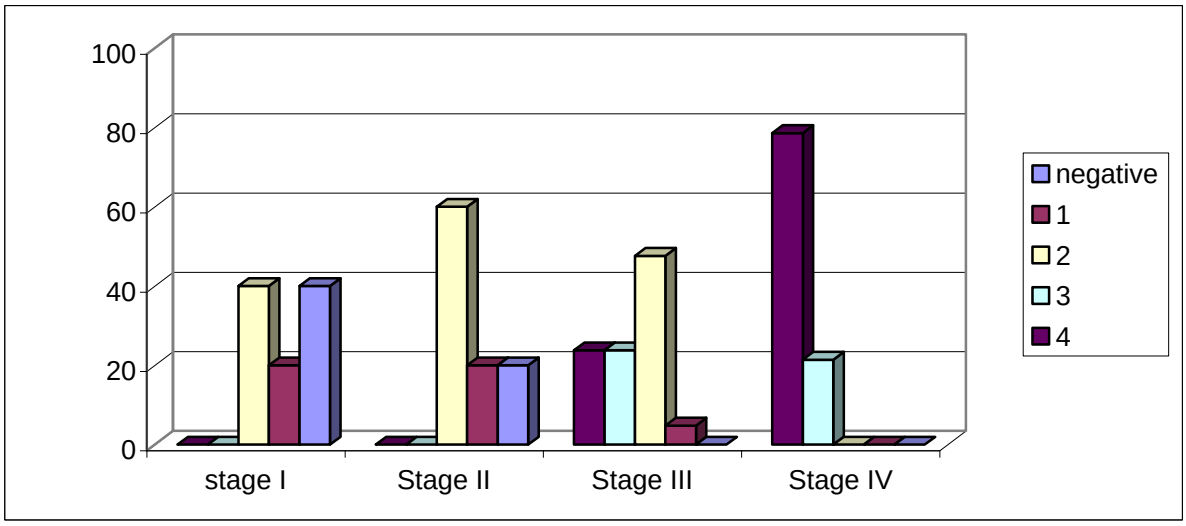
Graph(13) Relationship between The pattern of MUC-1 expression and nuclear grade of malignant kidney tumor.

Relationship between the MUC-1 score and the stage of malignant kidney tumors:

It was noticed that the low staged (I&II) cases recorded low MUC-1 score (-ve &1&2) , classified as following: (40%) of stage I was negatively stained ,(20%) recorded score(1) and (40%) recorded score(2). (20 %) of stage II was at score 1, (60%) was at score 2 and 20 % was negatively stained The advanced stage (III&IV) had a higher staining score. As all cases of stage IV and 57.6% of stage III recorded high score (3&4) . There was a statistically significant correlation between MUC-1 score and stage of malignant kidney tumors . P value=<0,05. The advanced stage had the highest score in the contrast , the early stage , recording lower expression score.

Table (21) ***Relationship between MUC-1 expression and stage of tumors***

Stage	No of cases	Score									
		1		2		3		4		Negative	
		No	%	No	%	No	%	No	%	No	%
Stage I	5	1	20	2	40	0	0	0	0	2	40
Stage II	10	2	20	6	60	0	0	0	0	2	20
Stage III	21	1	4.8	10	47.6	5	23.8	5	23.8	0	0
Stage IV	14	0	0	0	0	3	21.4	11	78.6	0	0
Total	50	4	8	18	36	8	16	16	34	4	8



Graph(14) ***Relationship between MUC-1 score and stage of tumors***

Relationship between the MUC-1 pattern and stage of malignant kidney tumors:

From the underlying table , a statistically significant correlation between MUC-1 pattern and stage of malignant kidney tumors was observed . As all of stage I (100%) and (70%) of stage II showed purely circumferential membranous staining (M) All cases of stage IV (100%) and 61.9% of stage III showed mixed pattern , classified as following: the (M/C) patter was detected in 100 % of stage IV and 47.6% of stage III while (C/M) pattern was observed in 14.3% of stage III. *P value=<0.05*

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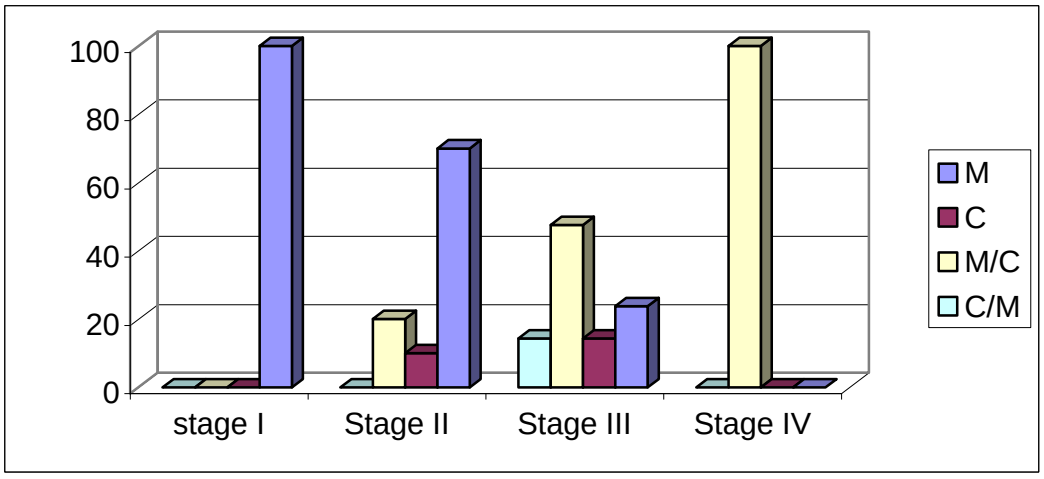
Table(22) ***Relationship between MUC-1 pattern and stage of malignant kidney tumors***

Stage	No of cases	Pattern of expression							
		M		C		M/C		C/M	
		No	%	No	%	No	%	No	%
Stage I	5	5	100	0	0	0	0	0	0
Stage II	10	7	70	1	10	2	20	0	0
Stage III	21	5	23.8	3	14.3	10	47.6	3	14.3
Stage IV	14	0	0	0	0	14	100	0	0
Total	50	17	34	4	8	26	52	3	6



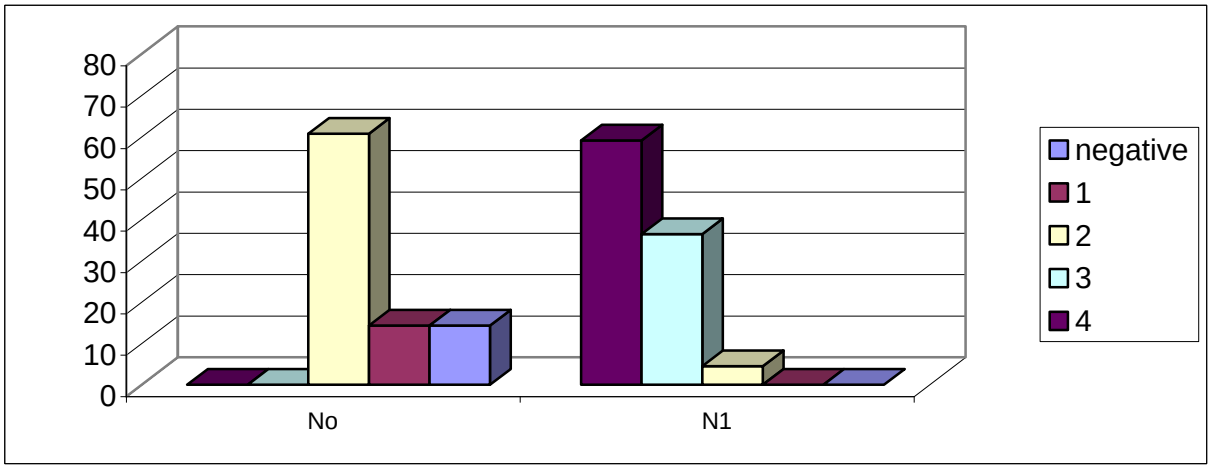
Graph (15) ***Relationship between MUC-1 pattern and stage of malignant kidney tumors***.

Relationship between the MUC-1 scoring and lymph node metastasis:

The lower MUC-1 score was observed in 89.3% of RCC cases without lymph node metastases (NO) which were distributed as following: (14.3%) of NO cases was negatively stained , (14.3%) was detected at score 1 and (60.7%) at score 2. RCC cases with lymph node spread(N1) showed higher MUC-1 score , as (36.4%) showed score (3) and (59.1%) recorded score 4 . There was a statistically significant correlation between MUC-1 score and lymph nodes metastasis . The high MUC-1 scoring was observed with RCC cases having lymph node spread and MUC-1 scoring decreased with cases ,showing no lymph node spread. . *P value=<0.05.*

Table(23) ***Relation between MUC-1 expression and lymph node metastasis***

State of nodal metastasis	No of cases	Score									
		1		2		3		4		Negative	
		No	%	No	%	No	%	No	%	No	%
No	28	4	14.3	17	60.7	0	0	3	10.7	4	14.3
N1	22	0	0	1	4.5	8	36.4	13	59.1	0	0
Total	50	4	8	18	36	8	16	16	34	4	8



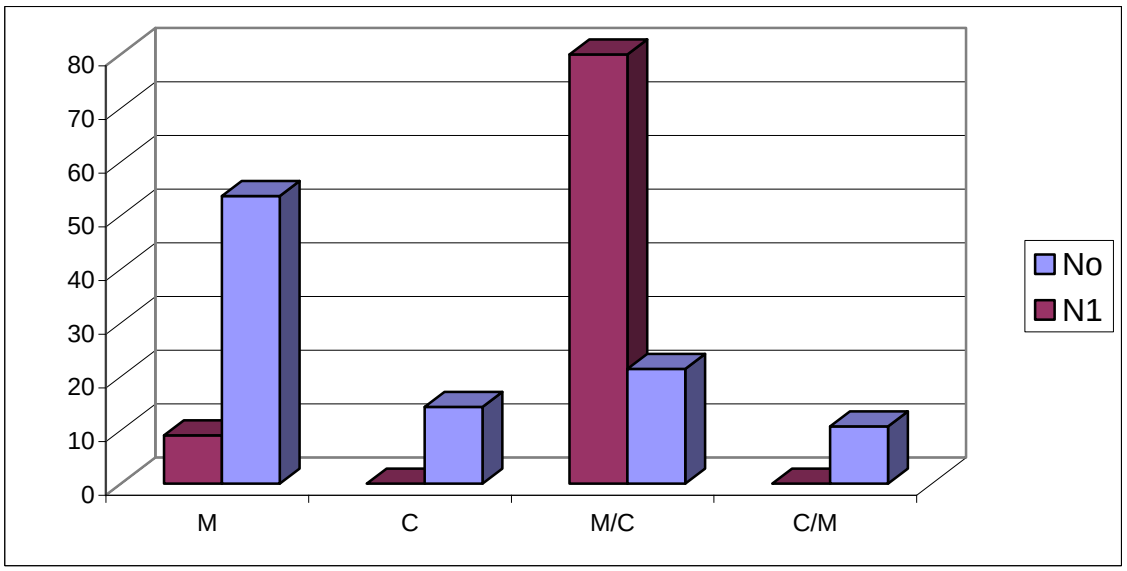
Graph*(16)* ***Relationship between MUC-1 expression and lymph node metastasis***

Relationship between MUC-1 pattern and lymph node metastasis:

The pure staining patterns was detected in 67.9% of NO cases , distributed as following: 53.6% showed (M) pattern and (14.3%) showed the (C) pattern. The mixed pattern (M/C) was detected in 91% of N1 cases , while only 9% of N1 showed (M) pattern. There is a statistically significant correlation between MUC-1 pattern, especially (M) and (M/C) patterns and lymph node status . Circumferential membranous pattern with cytoplasmic staining was highly expressed in lymph node metastases cases ,while pure membranous pattern was observed with RCC having no lymph node spread. *P value <0,05*

Table (24) *Relationship between MUC-1 pattern and lymph node metastasis:*

State of nodal metastasis	No of cases	Pattern							
		M		C		M/C		C/M	
		No	%	No	%	No	%	No	%
No	28	15	53.6	4	14.3	6	21.4	3	10.7
N1	22	2	9	0	0	20	91	0	0
Total	50	17	34	4	8	26	52	3	6



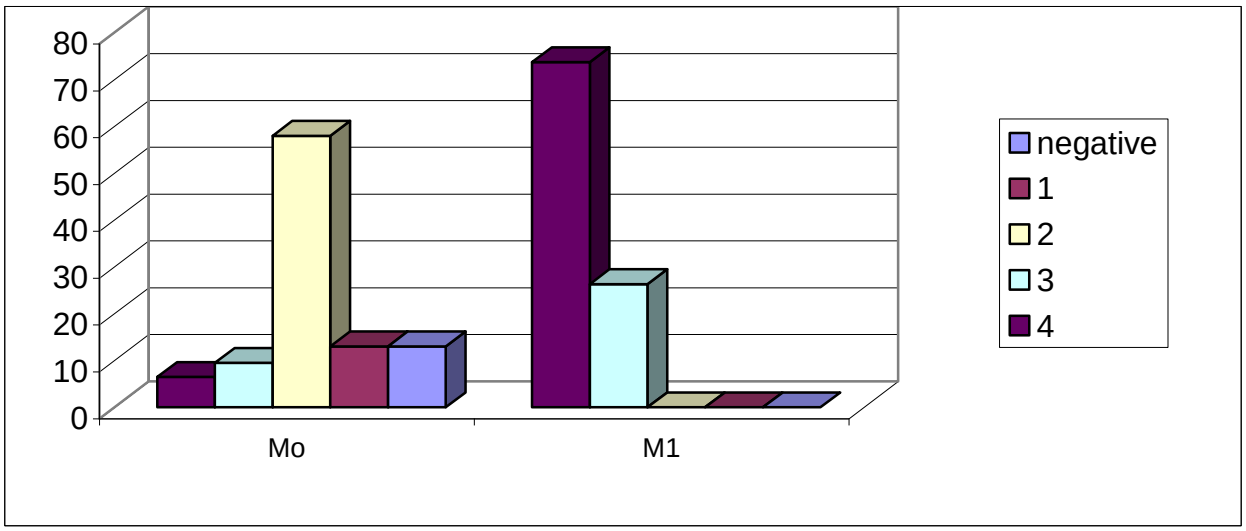
Graph*(17) *Relationship between MUC-1 pattern and lymph nodes metastasis:

Relationship between the MUC-1 score and distant metastasis:

The lower MUC-1 score was observed in 71 % of RCC cases without distant metastases(MO) which were distributed as following: (13 %) of MO cases was negatively stained , (13%) was detected at score 1 and (58 %) at score 2. RCC cases with distant metastases (M1) showed higher MUC-1 score , as (26.3%) showed score (3) and (73.7%) recorded score 4 . There was a significant statistically correlation between MUC-1 score and state of distant metastases ,P value=<0.05.The state of distant metastases showed the highest MUC-1 scoring ,contrary cases without distant metastases have lower score

Table (25) ***Relationship between MUC-1 expression and distant metastasis:***

State of distant metastasis	No of cases	Score									
		1		2		3		4		negative	
		No	%	No	%	No	%	No	%	No	%
Mo	31	4	13	18	58	3	9.5	2	6.5	4	13
M1	19	0	0	0	0	5	26.3	14	73.7	0	0
Total	50	4	8	18	36	8	16	16	34	4	8



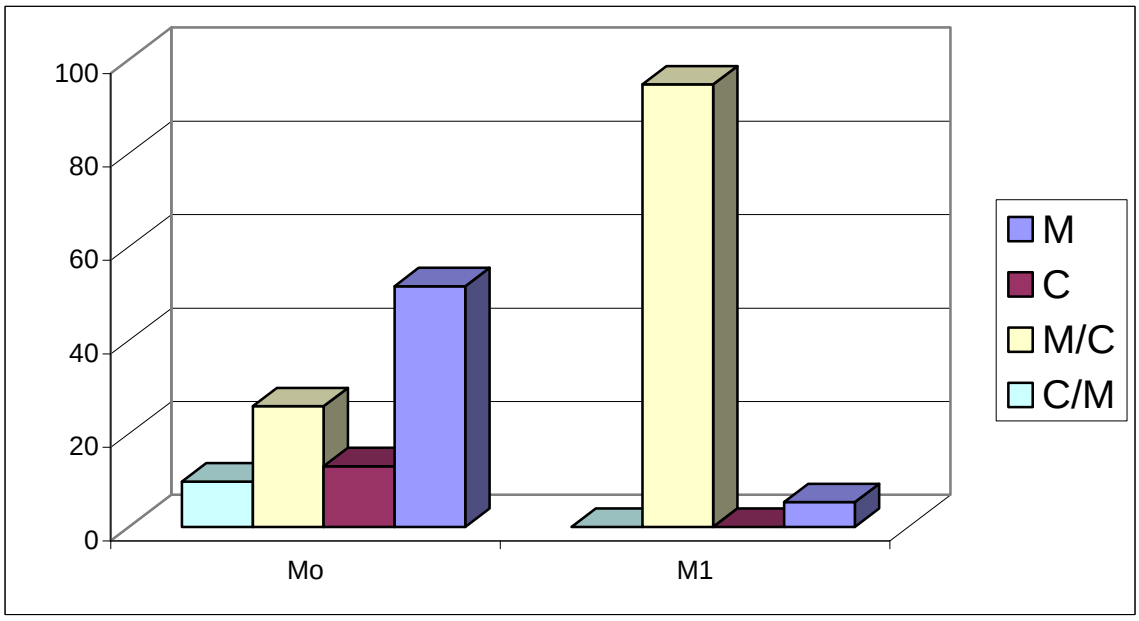
Graph(18) ***Relationship between MUC-1 expression and distant metastasis:***

Relationship between the MUC-1 pattern and distant metastasis:

It was noticed that , 94.7% of RCC cases with distant metastases (M1) had mixed showed (M/C) ,and only 5. 3% showed (M) pattern . On the contrast, cases of RCC without distant metastases , 51.5% had pure membranous pattern (M) and 13% had pure cytoplasmic pattern (C) M) .There was a positive statistically significant correlation between MUC-1 pattern, especially (M) and (M/C) patterns and state of distant metastases,. *P value <0,05*

Table (26) ***Relationship between MUC-1 pattern and distant metastasis:***

State of distant metastasis	No of cases	Pattern							
		M		C		M/C		C/M	
		No	%	No	%	No	%	No	%
Mo	31	16	51.5	4	13	8	25.8	3	9.7
M1	19	1	5.3	0	0	18	94.7	0	0
Total	50	17	34	4	8	26	52	3	6



Graph (19) ***Relationship between MUC-1 pattern and distant metastasis.***

Results of AgNORs staining

In all studied specimens, clearly defined silver-stained brown/black dots or blebs were observed in yellow nuclei, they were arranged into one or more clusters, or occurred as individual single dense dots. Table ( ) summarizes the results of AgNORs count in the apparently normal and different histopathological malignant kidney tissues.

The control group:

The AgNORs appeared as small, rounded, dense dots of uniform size and shape. Not more than 2 dots/nucleus could be detected in normal kidney tissue cases with a range from 1.1 up to 1.9 dots/nucleus (mean 1.4).

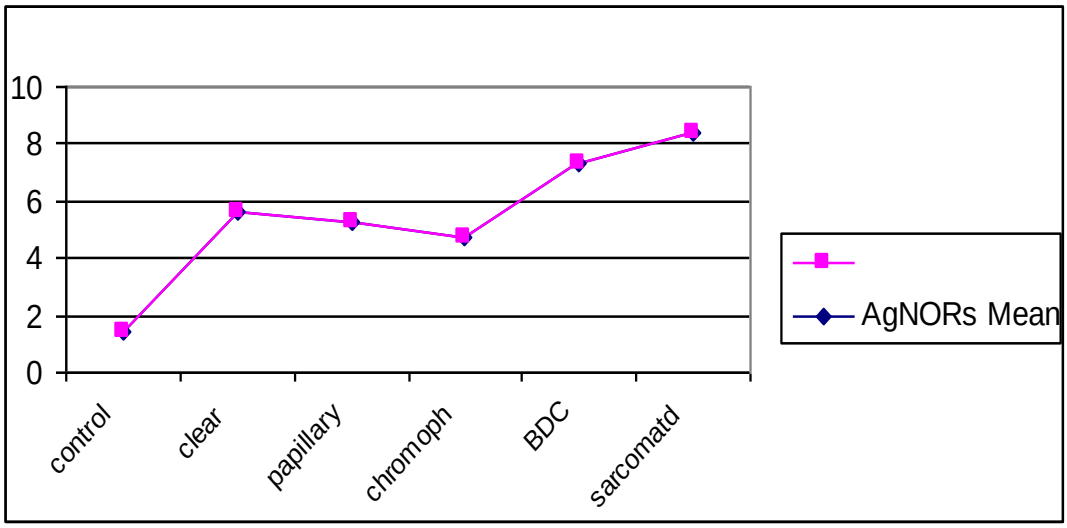
The malignant group:

The nuclei of malignant cells contained larger number of AgNORs(the mean up to 9.7), which showed more tendency to be pleomorphic both in shape and size , with more tendency to clumping . Some clusters are formed of small, dense irregular dots arranged at the periphery of nucleoli.

Table (27) Relationship between the mean AgNORs count to normal and malignant renal cell carcinoma

Histological type	No	AgNORs properties				
		range	mean	shape	size	distribution
Control	6	1.2-1.9	1.4	uniform, rounded, regular, dense dots	Uniform, small	Present in the nucleoplasm
Malignant tumors	45	2.1-9.7	6.1	Pleomorphic, irregular dense dots, some tendency to clumping	Pleomorphic, but generally small	Arranged at the periphery of the nucleoli, other dots are dispersed in the nucleoplasm.
Clear CRCC	20	2.1-9.7	5.6			
papillary	11	2.5-9.6	5.3			
chromophobe	7	3.4-6.7	4.7			
BDC	6	6.5-8.7	7.3			
sarcomatoid	6	6.7-9.7	8.4			

There was a significant difference between relationship of AgNORs staining properties to normal and malignant renal tissues. In between RCC types, the mean AgNORs count had a significant correlation with the histopathological type , p value <0.05. As the chromophobe RCC had the lowest mean AgNORs count while the highest ones were found in BDC and sarcomatoid type .



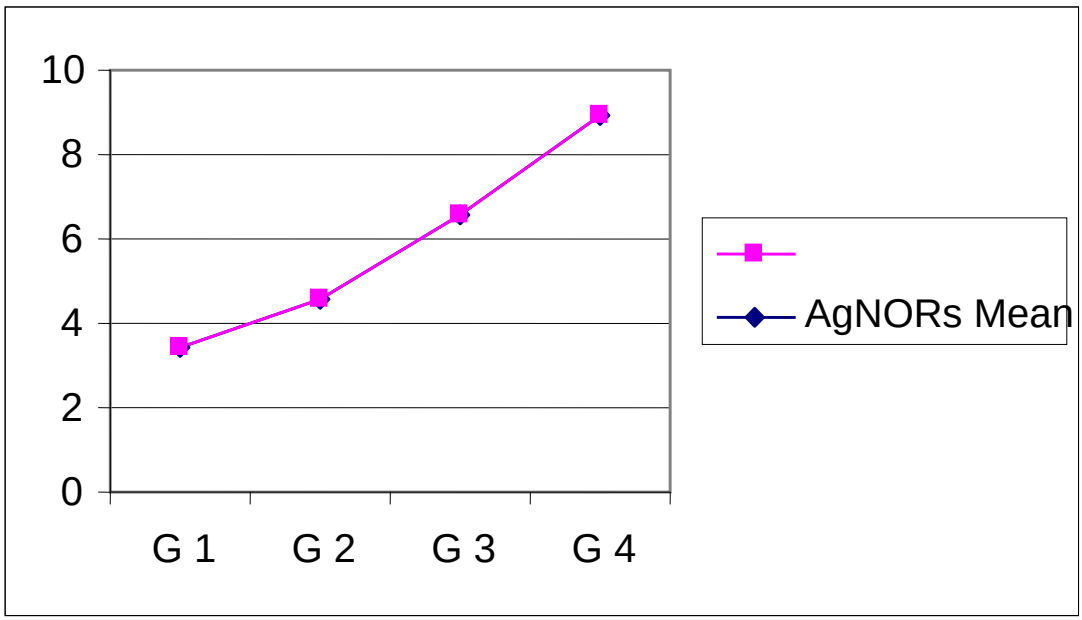
Graph (20) Relationship between the mean AgNORs count and normal & malignant renal tissues:

Relationship between the AgNORs count/cell and grade of malignant kidney tumors:

Cases of RCC with lower nuclear grade (G1&G 2) had lower mean AgNORs count , as the mean AgNORs count of grade 1 was (2.7 dots/ nucleus) and of grade 2 was (4.1 dots/nucleus) .T he higher mean AgNORs count was detected with cases having higher grade (G3&g4) , in grade 3, it was(6.2 dots/nucleus) and in grade 4 it was (9.3 dots/nucleus). There was a statistically significant correlation between the mean AgNORs count/nucleus) and nuclear grade of tumor .P value = < 0.05. Cases of RCC with high grade recorded higher mean AgNORs count than lower grade cases.

Table (28) Relationship between The AgNORs count/cell and tumor grade of kidney carcinoma

Grade	No of cases	AgNORs count	
		range	mean
G1	6	2.1-3.9	2.7
G2	16	2.2-4.9	4.1
G3	13	3.4-8.5	6.2
G4	15	7.6-9.7	9.3



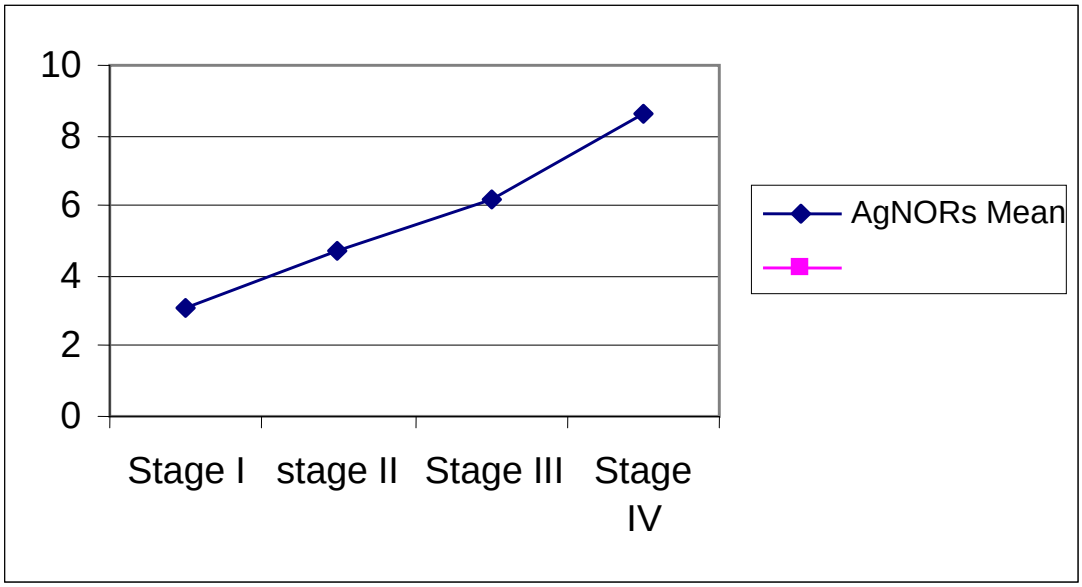
Graph(21) Relationship between The AgNORs count/cell and tumor grade of kidney carcinoma

Relationship between AgNORs count/cell and stage of malignant kidney tumors:

The advanced staged cases (III & IV) had a higher mean AgNORs count than in low stage cases (I &II) . As the cases of stage I showed (2.6 dots/ nucleus) , and it was (3.6 dots/nucleus) in stage II. The mean AgNORs count of stage III cases was(5.8 dots/nucleus) and of stage VI cases was (9.1 dots/nucleus). There was a statistically significant correlation between the mean AgNORS count/nucleus and stage of tumor .P value= < 0.05.

Table (29) Relationship between The AgNORs count/cell and tumor stage of tumors

Stage	No of cases	AgNORs count	
		range	mean
Stage I	5	2.1-3.8	2.6
Stage II	10	2.2-4.9	3.6
Stage III	21	4.1-9.5	5.8
Stage VI	14	6.7-9.7	9.1



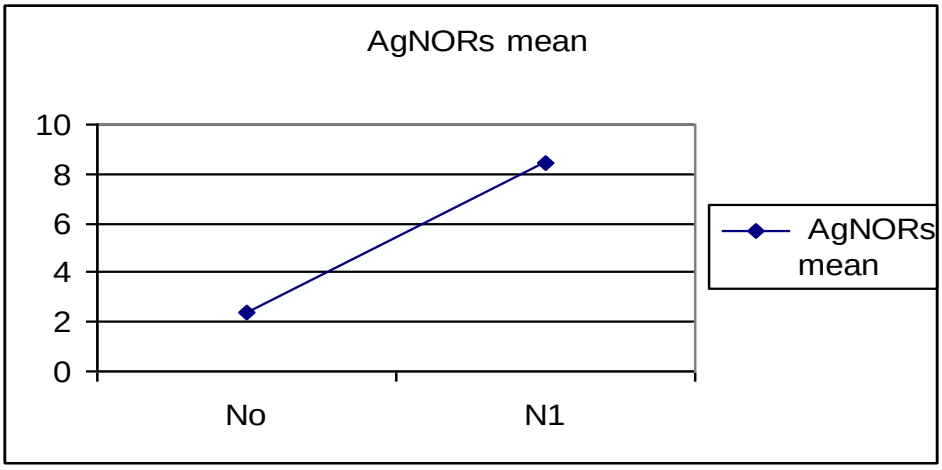
Graph (22) Relationship between The AgNORs count/cell and the stage of tumors.

Relationship between the AgNORs count/nucleus and lymph node metastasis

The mean AgNORs count/nucleus of 28 cases without lymph node metastases was (4.2 dots/nucleus), while the mean AgNORs count/nucleus of 22 cases with lymph node metastases was (8.2dots/nucleus). There was a statistically significant correlation between the AgNORs count and lymph nodes metastasis. P value= < 0.05. The mean AgNORs count/cell increases with cases having lymph node spread and decreases with cases without lymph node metastases.

Table (30) ***Relationship between the AgNORs count/nucleus and lymph node metastasis.***

State of nodal metastases	No of cases	AgNORs count	
		Range	mean
N0	28	2.1-7.7	4.2
N1	22	5.2-9.7	8.2



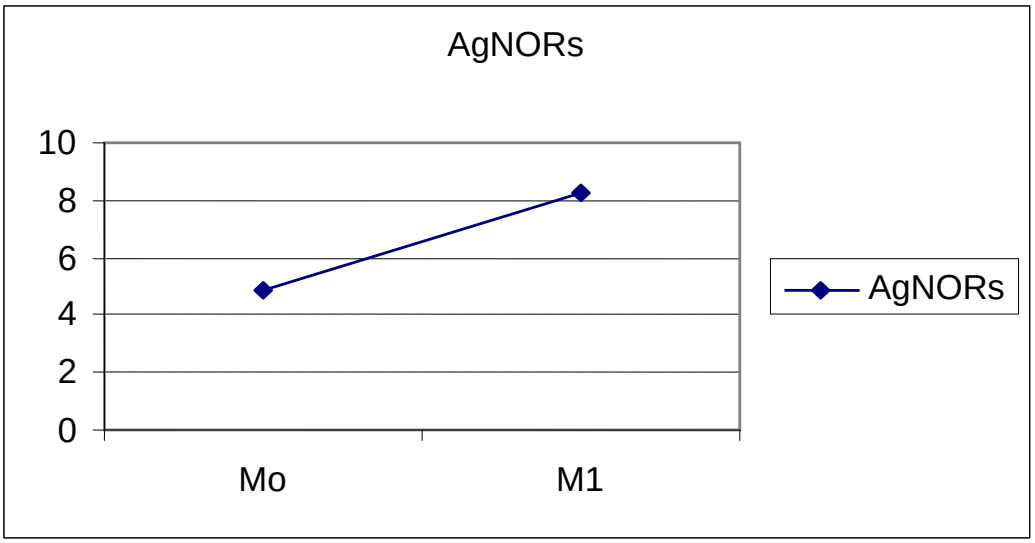
Graph (23) Relationship between AgNORs count/nucleus and lymph node metastasis.

Relationship between the AgNORs count/nucleus and distant metastasis

The mean AgNORs count/nucleus of 31 cases without distant metastases was (4.4dots/nucleus), while the mean AgNORs count/nucleus of 19 cases with distant metastases was (8.7 dots/nucleus). There was a statistically significant correlation between the mean AgNORs count and distant metastases. P value= <0.05. The mean AgNORs count was higher in cases having distant metastases more than cases ,having no distant metastases

Table (31) Relationship between the AgNORs count/nucleus and distant metastasis

State of distant metastases	No of cases	AgNORs count	
		Range	mean
Mo	31	2.1-8.7	4.4
M1	19	5.5-9.7	8.7



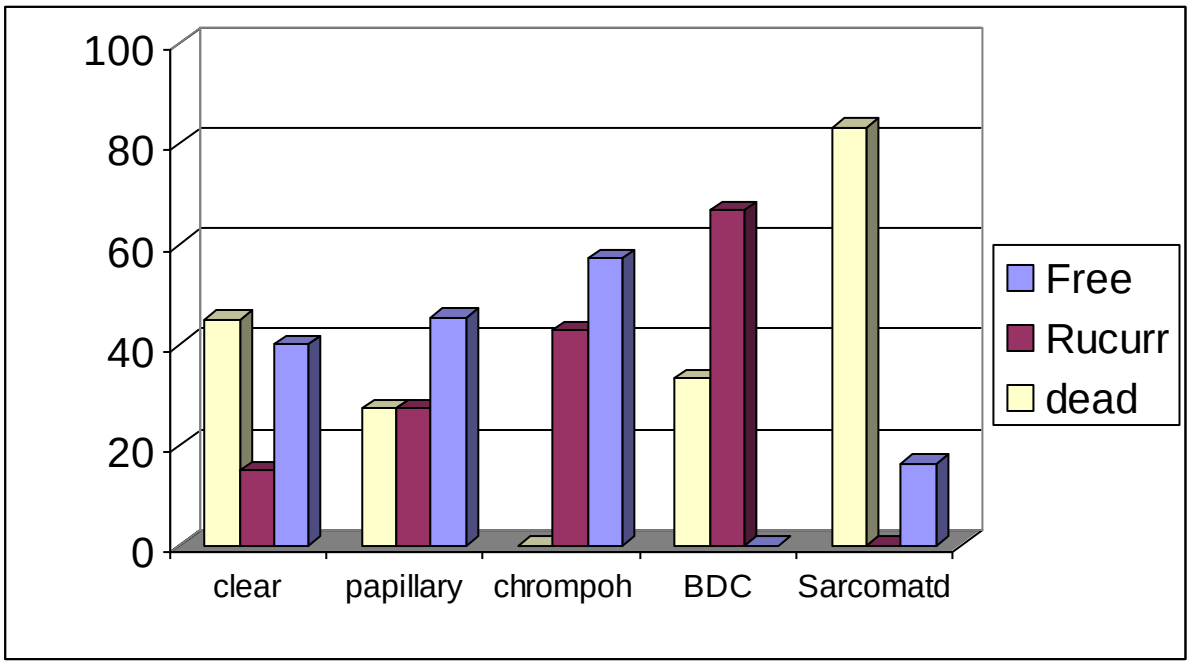
Graph(24) Relationship between the AgNORs count/nucleus and distant metastasis

Relationship between the histopathological types and one- year survival:

As regarding survival of patients after one year, 18cases (36%) were disease-free, while 13 cases (26%) were disease recurrence and 19 cases(38%) died. Out of 20 cases of cc RCC (40%) were disease- free, (15%) were recurrent and (45%) died .Out of 11 papillary RCC cases (45.5%) were disease- free , (45.5%) died and (9.1%) were recurrent. Most of chromophobe (57.1%) were disease-free, and 1 case(14.3%) died. The morbidity /mortality rate increased with BDC and sarcomatoid types as, cases (66.7%) of BDC were recurrent, 33.3% of BDC and 83.3% of sarcomatoid died. There was a insignificant correlation histopathological type and one- year survival, but the chromophobe RCC had the best prognosis .P value >0.05.

Table (32) One-year survival in different histological types of kidney cancer:

Type	No of cases	Survival within 1 year					
		Free		Recur		dead	
		No	%	No	%	No	%
Clear	20	8	40	3	15	9	45
Papillary	11	5	45.4	3	27.3	3	27.3
Chromophobe	7	4	57.1	3	42.9	0	0
BDC	6	0	0	4	66.7	2	33.3
Sarcomatoid	6	1	16.7	0	0	5	83.3
Total	50	18	36	13	26	19	38



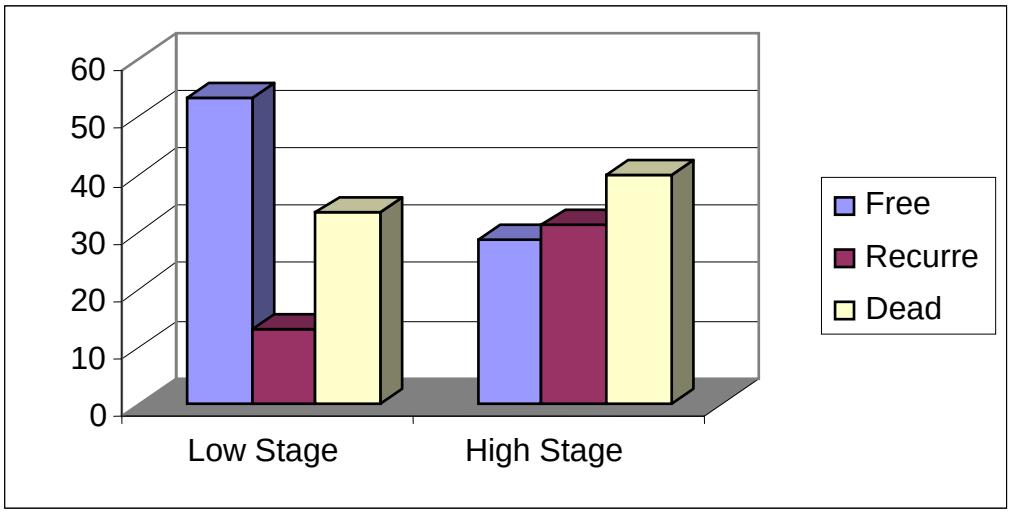
Graph(25) One-year survival in different histological types of kidney cancer:

***Relationship between the stage of tumors and one- year survival* :**

If stage I , II are considered as low stage and both stage III and IV as advanced stage , so 53.4% of low stage cases were free-disease survival , 13.3% were recurrent and 33.3% died . The mortality /morbidity rate was increased with advanced stage ,as 40 % of advanced stage died and 31.4% were recurrent . There was a significant statistically correlation between the stage of tumors and one-year survival, P value=< 0.05. The morbidity /mortality rate was significantly higher in advanced stage .

Table (33) Relationship between the stage of tumors and one-year survival

Stage	No of cases	Survival within 1 year					
		Free		Recur		dead	
		No	%	No	%	No	%
Low stage	15	8	53.4	2	13.3	5	33.3
High stage	35	10	28.6	11	31.4	14	40
Total	50	18	36	13	26	19	38



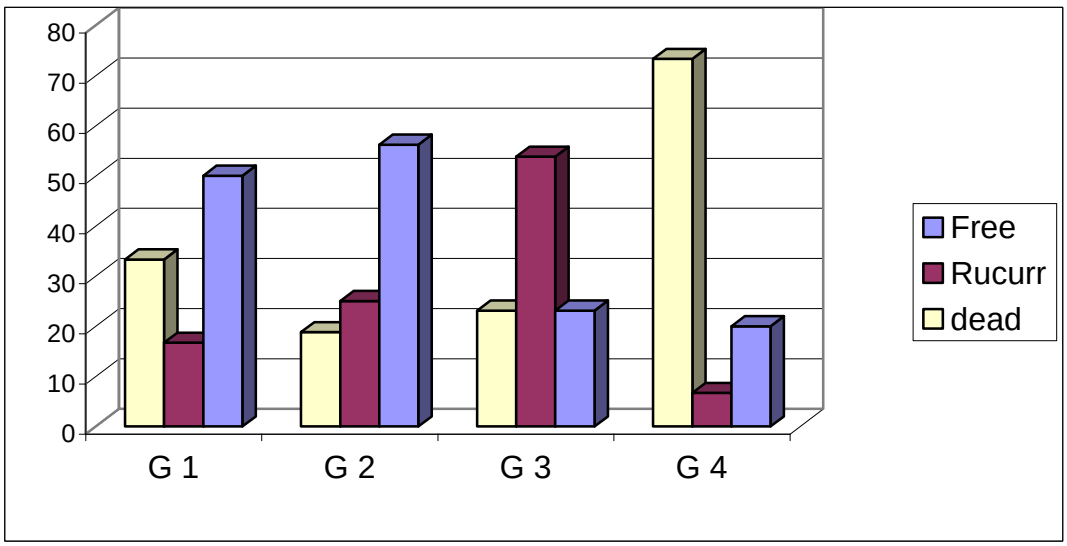
Graph (26) **Relation between the stage of tumors and one-year survival**

Relationship between the nuclear grade of tumors and one- year survival

As regarding to nuclear grade , 50% of grade 1 and 56.2% of grade 2 were free-disease survival, in the other hand 33,3% of grade 1 and 18.8% of grade 2 died .The mortality/morbidity rate increased in high grade , as (53.8%) of grade 3 were recurrent and 73.3% of grade 4 died. There was a statistically significant correlation between the grade of tumors and one-year survival. The lower nuclear grade , the more the chance for disease-free survival. *P value=< 0.05*

Table (34) Relationship between the grade of tumors and one-year survival :

grade	No of cases	Survival within 1 year					
		Free		Recur		dead	
		No	%	No	%	No	%
G1	6	3	50	1	16.7	2	33.3
G2	16	9	56.2	4	25	3	18.8
G3	13	3	23.1	7	53.8	3	23.1
G4	15	3	20	1	6.7	11	73.3
Total	50	18	36	13	26	19	38



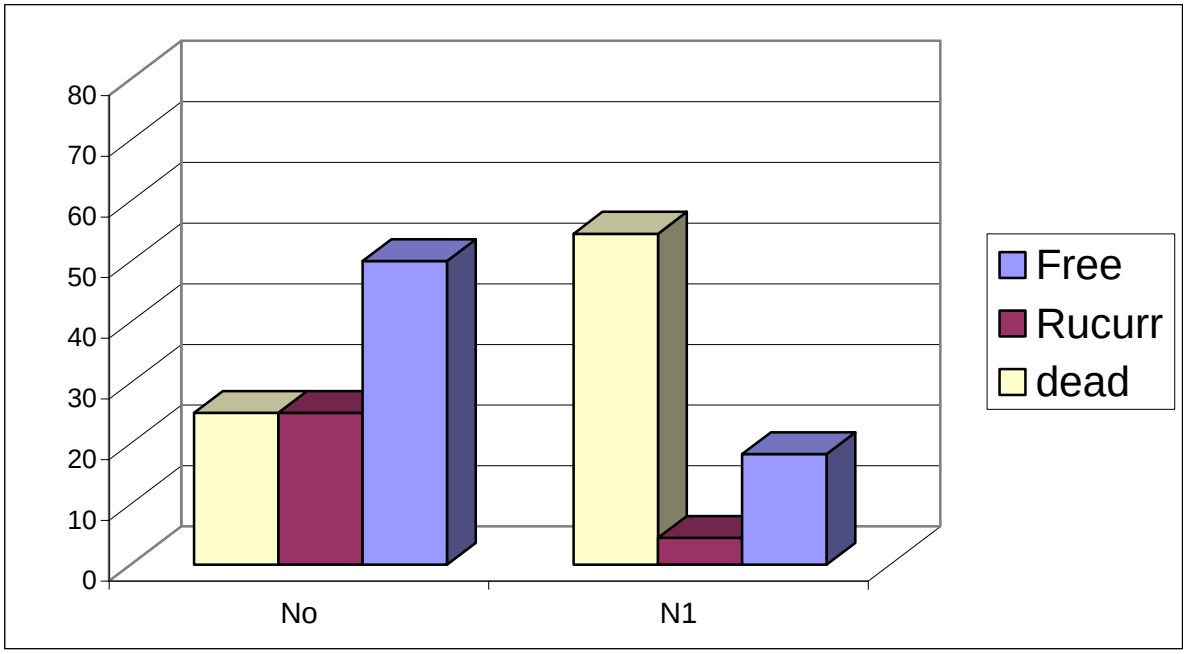
Graph (27) **Relationship between the grade of tumors and one-year survival**

Relationship between lymph node metastasis and one-year survival

Among the studied cases of RCC without lymph node metastases, 50 % were free-diseases survival and 25% died. In contrast , cases with lymph node metastases, 54.5% died and 18.2% were free-disease survival. There was a statistically significant correlation between the lymph nodes status and one-year survival , p value=<0.05. The presence of lymph node spread tended to have a worse survival rate.

Table (35) **Relationship between lymph nodes metastasis and one-year survival**

State of nodal metastases	No of cases	Survival within 1 year					
		Free		Recurr		Dead	
		No	%	No	%	No	%
N 0	28	14	50	7	25	7	25
N 1	22	4	18.2	6	27.3	12	54.5
Total	50	18	36	13	26	19	38



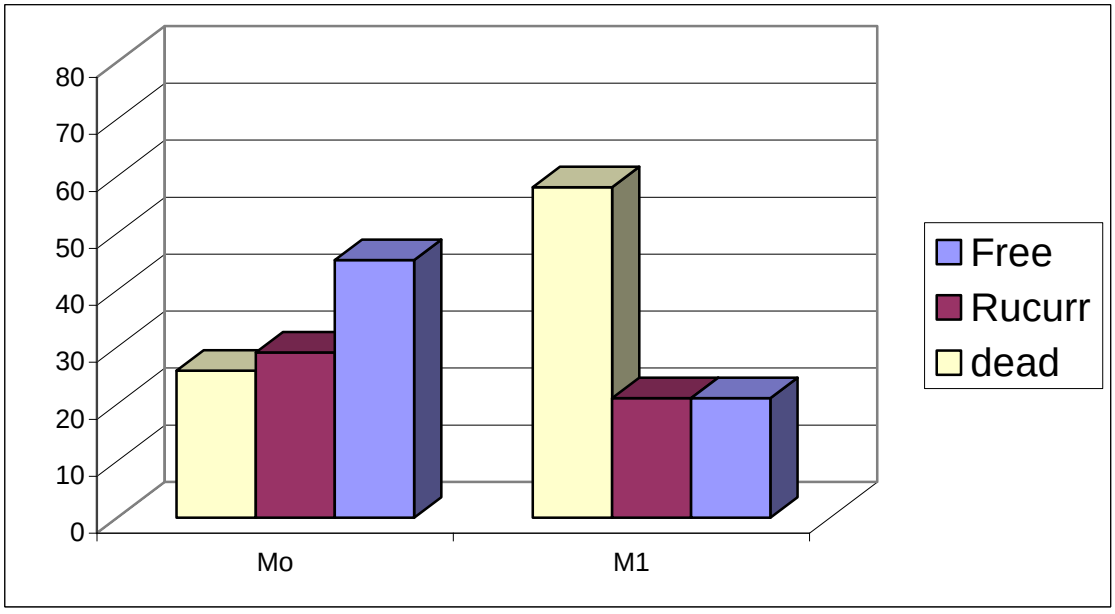
Graph (28) **Relationship between lymph node metastasis and one-year survival**

Relationship between distant metastasis and one -year survival:

Among the studied cases of RCC without distant metastases, 45.2 % were free-diseases survival and 25.8% died. In contrast , cases with distant metastases, 58% died and 21% were free-disease survival. There was a statistically significant correlation between the distant metastases and one- year survival , p value=<0.05. The presence of distant metastases was associated with increased morbidity /mortality rate.

Table (36) **Relationship between distant metastasis and one -year survival**:

State of distant metastases	No of cases	Survival within 1 year					
		Free		Recur		dead	
		No	%	No	%	No	%
M 0	31	14	45.2	9	29	8	25.8
M 1	19	4	21	4	21	11	58
Total	50	18	36	13	26	19	38



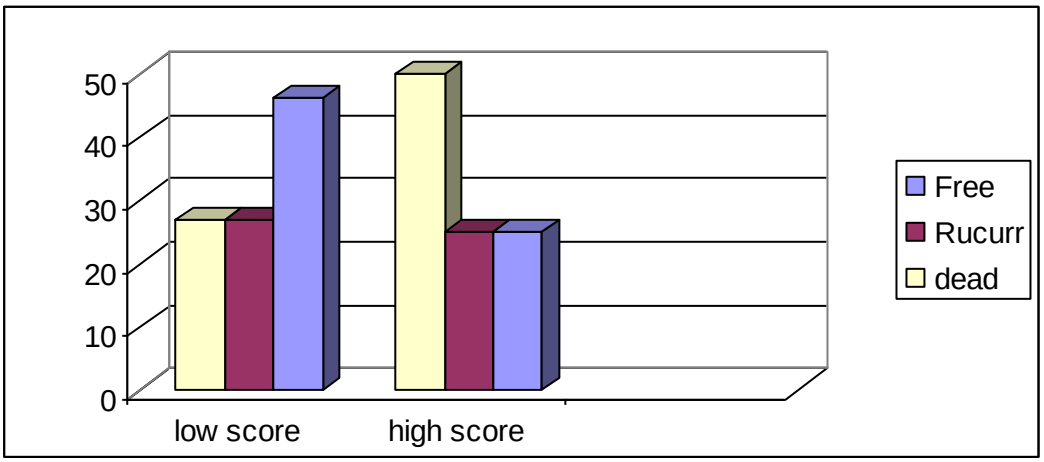
Graph (29) **Relationship between distant metastasis and one-year survival .**

Relationship between the score of MUC-1 staining and one-year survival :

MUC-1 score 1 & 2 and negative staining were considered as low score , while score 3 &4 were considered as high score . Free-disease survival was detected in 46.2% of low MUC-1 score , but it was decreased in high score , reaching 25% . The morbidity/mortality rate increased with high scored cases as, 50 % of them died and 25 % were recurrent while only 26.9% of low score died. There was a statistically significant correlation between the score of MUC-1 staining and one- year survival , p value=<0.05.The morbidity/mortality risk was associated with higher score cases.

Table (37) **Relationship between the score of MUC-1 staining and one- year survival**

Score of MUC-1 expression	No of cases	Survival within 1 year					
		Free		Recur		dead	
		No	%	No	%	No	%
Low score	26	12	46.2	7	26.9	7	26.9
High score	24	6	25	6	25	12	50
Total	50	18	36	13	26	19	38



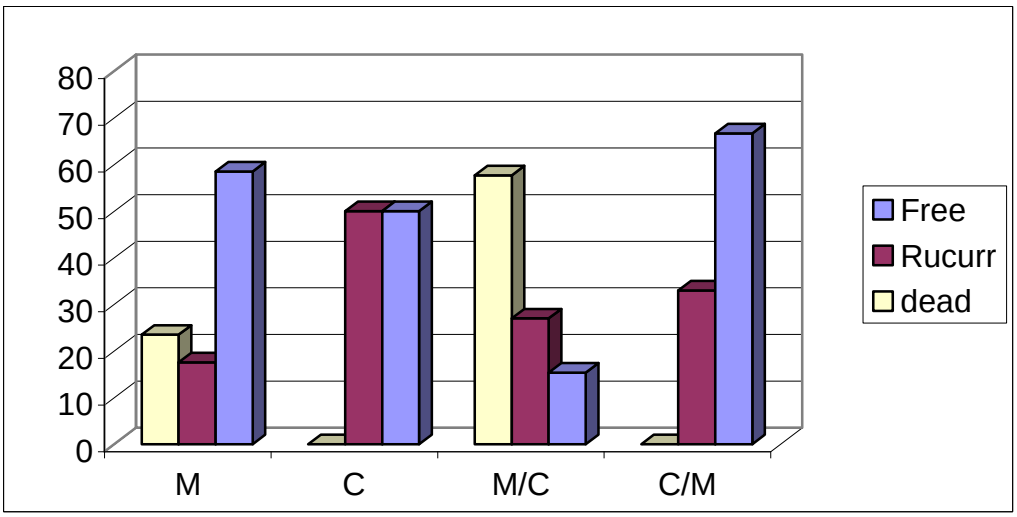
Graph (**30**) **Relationship between the score of MUC-1 staining and one-year survival**

Relationship between the pattern of MUC-1 staining and one –year survival :

As regarding to MUC-1 pattern, 58.9% of (M) pattern were disease –free, 17.6% were recurrent and 23.5% died .Free survival rate decreased with the (M/C) pattern ,as, 15.4% of it was disease –free, while the recurrence was detected in 27% and 57.6 % died.. There was a statistically significant correlation between the pattern of MUC-1 staining and one-year survival , p value=<0.05. The mixed pattern (M/C).has the worse prognosis.

Table (38) **Relationship between the pattern of MUC-1 staining and one-year survival :**

Pattern of MUC-1 expression	No of cases	Survival within 1 year					
		Free		Recurr		dead	
		No	%	No	%	No	%
M	17	10	58.9	3	17.6	4	23.5
C	4	2	50	2	50	0	0
M/C	26	4	15.4	7	27	15	57.6
C/M	3	2	66.7	1	33.3	0	0
Total	50	18	36	13	26	19	38



Graph (31) Relationship between the pattern of MUC-1 staining and one-year survival

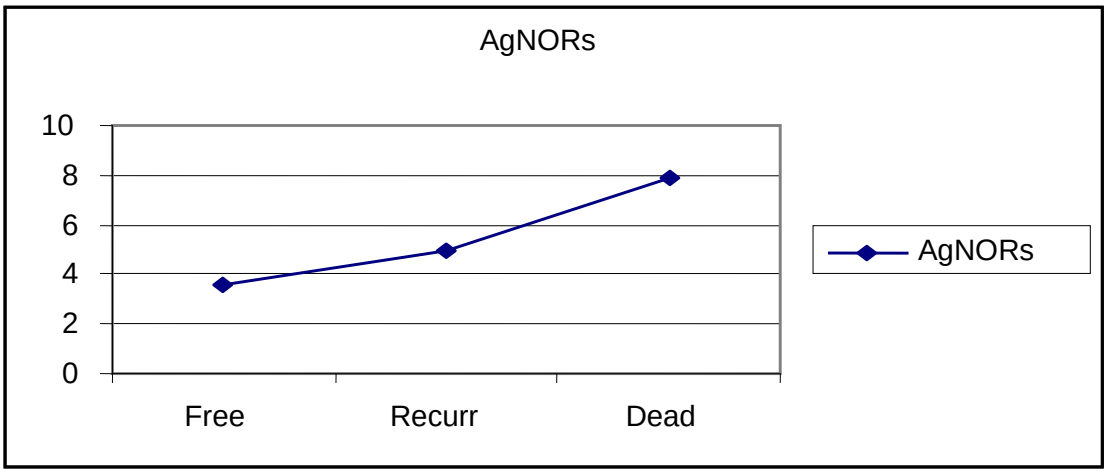
Relationship between the mean AgNORs count and one- year survival

Free-disease survival group had the lowest mean AgNORs count/nucleus (3.6 dots/nucleus), while the mean AgNORs count/nucleus of recurrent cases was (5 dots/nucleus). It was the highest in died cases (7.9 dots/nucleus). There was a statistically significant correlation between the mean AgNORs count and one-year survival. P value =<0.05.Free-survival cases had lower mean AgNORs count , and died cases recorded higher mean.

.

Table (39)**Relationship between the mean AgNORs count and one- year survival**

One-year Survival	No of cases	AgNORs count	
		Range	Mean
Free	18	2.1-4.9	3.6
Recur	13	3.4- 6.9	5.2
Dead	19	5.2-9.7	7.9



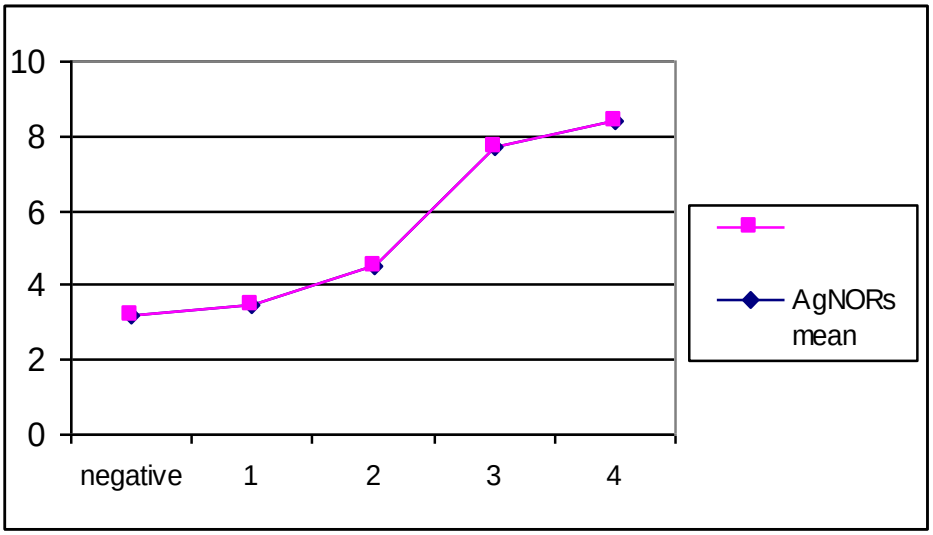
Graph (32) **Relationship between the mean AgNORs count and survival with in 1 year**.

Relationship between the mean AgNORs count/nucleus and score of MUC-1 expression:

The lower MUC-1 scored cases(-ve &1&2) recorded lower AgNORs count ,as negatively MUC 1 stained cases showed (2.3 dots/ nucleolus), The mean AgNORs count of score 1 was(3.5 dots/nucleus) and it was (4.4 dots/nucleus) in score 2. cases . But it was increased with the higher MUC-1 scored cases (3&4), as the mean AgNORs count of score 3 was 7.7dots/ nucleus and of score 4 was(8.4 dots/nucleus). There was a statistically significant correlation between mean AgNORs count/nucleus and the score of MUC-1 expression. the higher MUC-1 scoring cases showed higher AgNORs count than lower scoring ones. P value <0.05.

Table (**40**) ***Relationship between the mean AgNORs count/nucleus and score of MUC-1 expression***

Score of MUC1	No of cases	AgNORs count	
		range	mean
negative	4	2.1-4.2	2.3
1	4	4.5-4.1	3.5
2	18	5.6-7.7	4.4
3	8	3.4-7.7	7.7
4	16	4.2-9.7	8.4



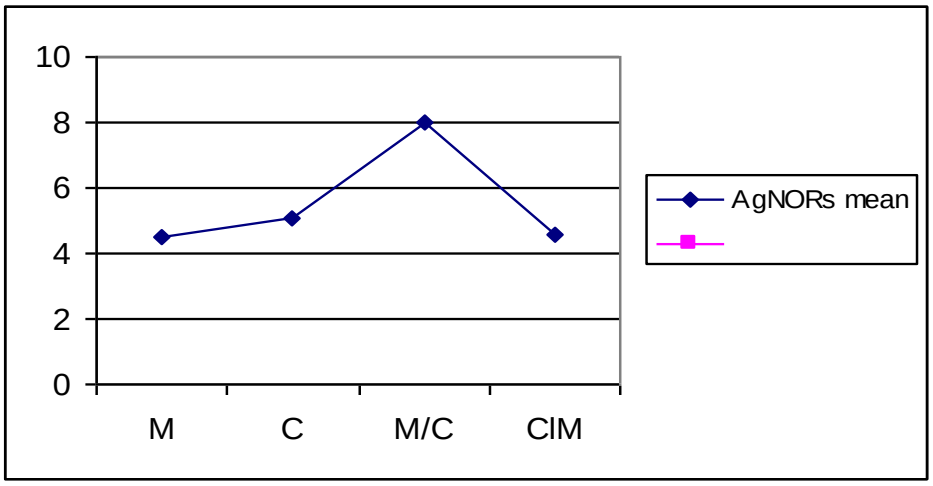
Graph (33) ***Relationship between the mean AgNORs count/nucleus and score of MUC-1 expression***.

Relationship between the mean AgNORs count/nucleus and pattern of MUC-1 expression:

The mean AgNORs count of pure expression patterns was lower than it in the mixed patterns . The pure membranous pattern (M) had (3.7 dots/nucleus) and pure cytoplasmic pattern (C) showed (4.6 dots/nucleus). The mean AgNORs count of mixed pattern (M/C) was (7.7 dots/nucleus) and of predominantly cytoplasmic ,mixed pattern (C/M) (4.7 dots/nucleus). There was a statistically significant correlation between AgNORs count and MUC- 1 pattern ,especially the (M) and (M/C) patterns . The mixed pattern with predominantly membranous expression had the highest mean AgNORs count P value <0.05.

Table (41) ***Relationship between the mean AgNORs count/nucleus and pattern of MUC-1 expression:***

Pattern of MUC1	No of cases	AgNORs count	
		range	mean
M	17	2.5-7.5	3.7
C	4	4.2-7.1	4.6
C/M	3	3.4-6.1	4.7
M/C	26	4.2-9.7	7.7



M= membranous C=cytoplasmic M/C= mixed with predominant membranous C/M=Mixed with predominant cytoplasmic.

Graph(34) ***Relationship between the mean AgNORs count/nucleus and pattern of MUC-1 expression.***

Different clinicapathological parameters in relation to MUC-1 score , & patterns and one-year survival :

The median value of MUC-1 scoring for all studied cases was 58%. So the cases of RCC were divided according to this value into 25 cases (50%) of low score(<58%) and other 25 cases(50%) of high score(>58%). Concerning the pattern , Both of (M) and (C) were categorized as pure pattern and Both of (M/C) and (C/M) were categorized as mixed pattern .From 50 studied cases , 21 cases(42%) had pure pattern and 29 cases(58%) showed mixed pattern. As regarding survival of patients, 18 cases (36%) were free, and 32(64%) cases died or showed disease recurrence.

Table (42) Different clinicapathological parameters in relation to MUC-1 score , & patterns and one-year survival .:

Clinicopathological parameters	MUC-1 Score		P value	MUC-1 patterns		P value	One –Y survival		P value
	Low <58%	High >58%		Pure	Mixed		Free	Re/Dead	
1) Type	%	%		%	%		%	%	
Clear	60	30		55	45		40	60	
papillary	63.6	36.4	>0.05	54.5	45.5	<0.05	45.4	54.6	<0.05
Chromophobe	85.7	14.3		57.1	42.9		57.1	42.9	
BDC	0	100		0	100		0	100	
sarcomatoid	0	100		0	100		16.7	83.3	
2) grade G1	83.3	16.7		83.3	16.7		50	50	
G2	100	0	<0.05	75	25	<0.05	56.2	43.8	<0.05
G3	23.1	76.9		15.4	84.6		23.1	76.9	
G4	6.7	93.3		0	100		20	80	
4) Stage Stage I	20	80		100	0		40	60	
Stage II	100	0	<0.05	80	20	<0.05	60	40	<0.05
Stage III	52.4	47.6		38.1	61.9		38.1	61.9	
Stage IV	0	100		0	100		14.3	85.7	
4) LN status No	82.1	7.9	<0.05	67.9	32.1	<0.05	50	50	<0.05
N1	9.9	90.1		9	91		18.2	81.8	
5) Distant metastasis status Mo	77.4	22.6	<0.05	64.5	35.5	<0.05	45.2	54.8	<0.05
M1	5.3	94.7		5.3	94.7		21	79	