



RESULTS

REGISTRATION



Results

Patients group:-

Included 30 patients suffering from RA defined according to the American College of Rheumatology (ACR) revised criteria (*Arnett et al, 1988*).

They were 21 females (70%) and 9 males (30%) their age ranged between 26-52 years with a mean of 39.6 ± 8.9 years

Control groups: -

Classified into two groups:

Group I: Including 10 patients suffering from other rheumatic diseases, 3 male patients with ankylosing spondylitis, 7 female patient with SLE. Their ages ranged between 28-54 with a mean of 41.1 ± 10.8 years

Group II: Including 10 apparently healthy subjects were carefully chosen matched for age, sex and socioeconomic class with the patients. They were 8 females (80%) and 2 males (20%), their ages ranged between 25-51 years with a mean of 39.5 ± 10.3 years.

Clinical data of RA patients:

- Disease duration ranged between 2-15 years with a mean of 6.16 ± 4.2 years.
- Morning stiffness ranged between 10-60 minutes with a mean of 24.83 ± 16.78 minutes.
- VAS level ranged between 1-9 cm with a mean of 5.03 ± 1.97 .
- AI ranged between 20-48 with a mean of 31.46 ± 10.38 .
- The grip strength ranged between 70-150 mmHg with a mean of 116.66 ± 20.85 .

- The functional capacity grading ranged between I-III with a mean of 2.3 ± 0.83 they were (5, 13, 10, 2,) patients in grade I, II, III, IIII respectively.

Laboratory data:

- ESR of the first hour ranged between 20-90mm/hour with a mean of 49 ± 23.54 mm/hour.
- The haemoglobin concentration ranged between 10%-14% with a mean of 11.36 ± 1.15 %.
- As regard seropositivity there were 25 seropositive patients, (83.33%) 5 seronegative patient, (16.66%).
- The RF titre ranged between 16-46 with a mean of 48.2 ± 20.6 .
- The frequency of AKA positive RA patients: 23 patients (76-7%) in comparison to 5 patients (50%) of other rheumatic diseases and 3 subjects (30%) of healthy controls.
- The AKA titre ranged between 160-2560 with a mean of 933.33 ± 771.44

Radiological data of RA patients:-

The radiological grading according to *Larsen 1977* ranged between grade I grade IV with a mean of 2.4 ± 1 , they were (6, 11, 7, 6) in grade I, II, III, IV respectively

Results of Demographic Data

- As regards age distribution there was a statistically insignificant difference between all groups ($P > 0.05$) table (1)
- As regards sex distribution there was a statistically insignificant difference in sex distribution between the different groups ($P > 0.05$) table (2), (Fig. 5)

Statistical Results of Clinical, Laboratory and Radiological Studies

- There was a statistically significant increase in the frequency of AKA positive in RA patients in comparison to control groups ($P < 0.05$) table (3), (Fig. 6).
- The sensitivity of AKA testing in RA patients was (76.7%) while the specificity was (70%). The positive predictive value and the negative predictive value were (88.5%) (50%) respectively, table (4).
- The sensitivity of RF testing in RA patients of our study was (83.3%) while the specificity was (90%). The positive predictive value and the negative predictive value were (96.1%), (64.2%) respectively table (4)
- There was a statistically significant increase in the mean level of AKA titre in RA patients in comparison to control groups, table (5)
- On comparison between AKA positive group and AKA negative group in RA patients according to the clinical laboratory and radiological parameters:
 - There was a highly significant difference between the two groups as regards VAS and RF ($P < 0.001$), table (6).
 - There was a significant difference between the two groups as regards age, group strength, disease duration articular index and ESR. ($P < 0.05$), table 6.
 - There was an insignificant difference between the two groups as regards morning stiffness and haemoglobin concentration ($P > 0.05$) table, (6) .

- On comparison between the mean level of AKA titre in female patients to the mean level of AKA in male patients an insignificant difference was found. ($P < 0.05$) table (7), (Fig. 7).
- On correlating the mean level of AKA titre and the functional capacity according to steinbroker classification a statistically high significant increase was found. ($P < 0.001$) table (8) (Fig. 8)
- On correlating the mean level of AKA titre and the radiological grading according to larsen a highly statistically significant increase was found. ($P < 0.001$) table (9) (Fig. 9)
- On studying the correlation coefficients between the clinical, laboratory and radiological variables of RA patients in relation to their AKA titre:-
 - There was an insignificant correlation between age, disease duration and AKA titre in RA patients ($P > 0.05$) table, (10).
 - There was a highly significant positive correlation with morning stiffness, articular index visual analogue scale, ESR and radiological grading. ($P < 0.001$), table (10).
 - There was a significant negative correlation with the mean grip strength of both hands and haemoglobin percentage in RA patients ($P < 0.05$), table (10).

• **Table (1) Age distribution in the studied groups.**

	RA patients		Control patients		Healthy controls	
	Min.	Max.	Min.	Max.	Min.	Max.
Range/yrs	26	52	28	54	25	51
Number	30		10		10	
\bar{X}	39.6		41.1		39.5	
+SD	8.6		10.8		103	
F	0.6					
P	> 0.0.5 insignificant.					

RA = Rheumatoid arthritis.

\bar{X} = Mean.

\pm SD = Standard deviation.

F = Fisher value of one way analysis of variance (ANOVA) test.

P = Probability of error.

Table (2) Sex distribution in the studied groups.

	RA patients		Control patients		Healthy controls	
	Number	%	Number	%	Number	%
Females	21	70	7	70	8	80
Males	9	30	3	30	2	20
X^2	0.4					
P	> 0.0.5 insignificant.					

X^2 = Chi - square value.

Fig. 5: Sex distribution in the studied groups

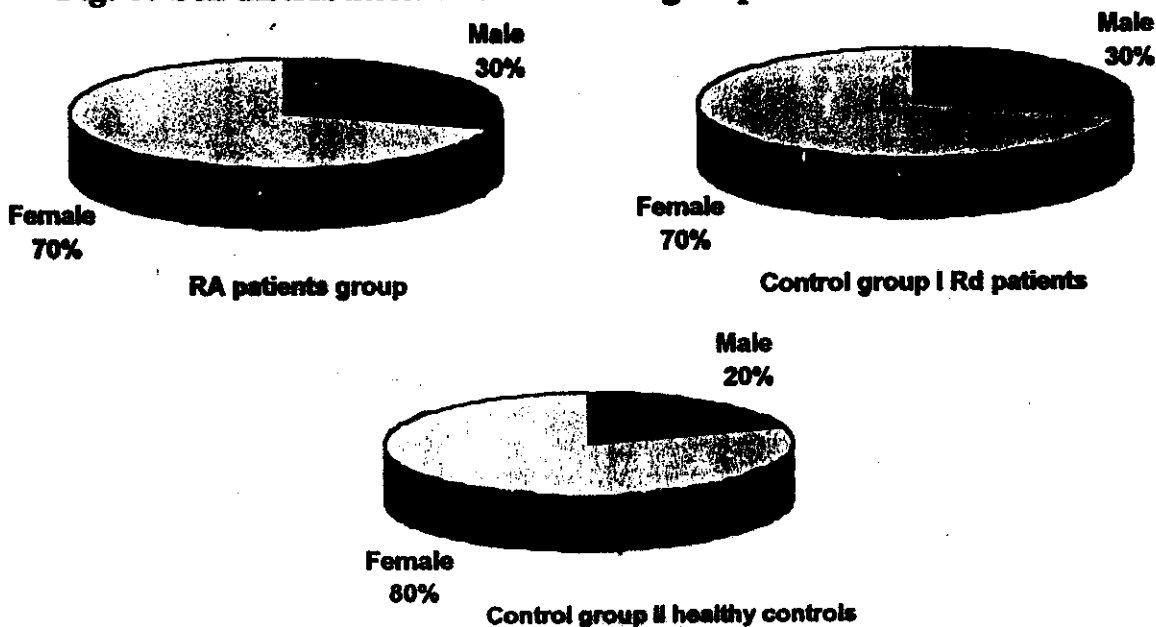


Table (3): Comparison between the frequencies of AKA in the studied groups.

	AKA +ve		AKA -ve		X ²	P
	Number	%	Number	%		
RA patients	23	76.7	7	23.3	7.7	< 0.05 significant
Control patients	5	50	5	50		
Health controls	3	30	7	70		

AKA = Antikeratin antibodies.

Fig. (6): Comparison between the frequencies of AKA in the studied groups.

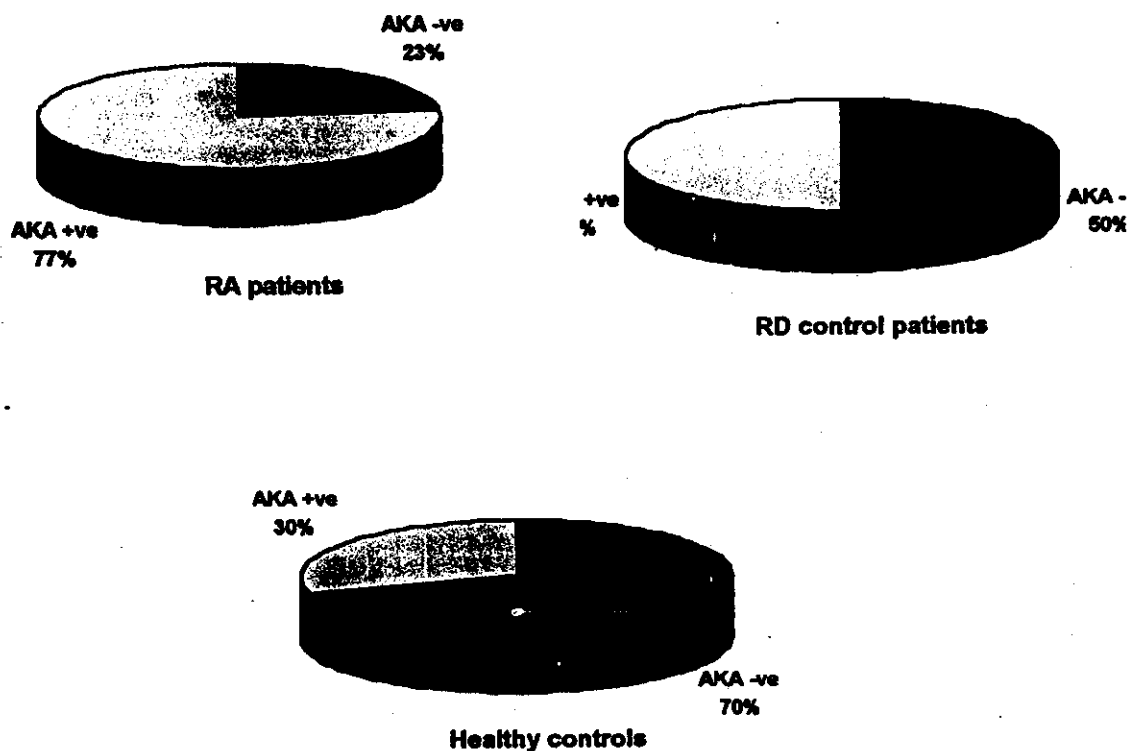


Table (4): Comparison between AKA titre in the studied groups.

	RA patients	Control patients	Control subjects
Number	30	10	10
\bar{X}	933.3	464.0	240.0
$\pm SD$	771.4	455.4	155.5
F	5.2		
P	<0.001 Highly significant.		

Fig (7): Comparison between AKA titre in the studied groups.

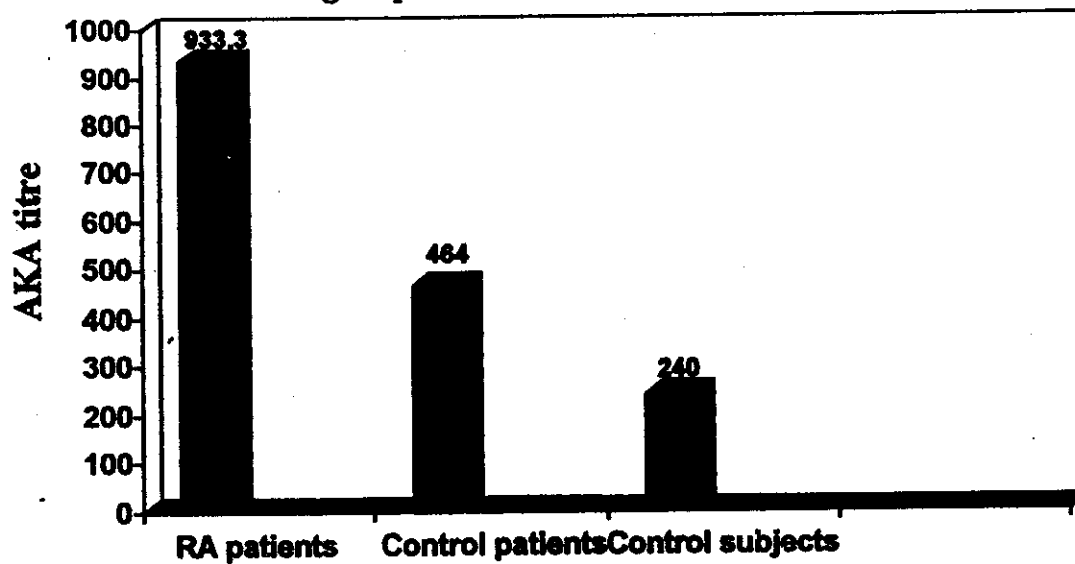


Table (5): Sensitivity, specificity predictive value (PPV) and negative predictive value (NPV) of AKA frequency in RA patients.

Serological marker	Sensitivity %	Specificity %	PPV %	NPV %
AKA	76.7	70	88.5	50
RF	83.3	90	96.1	64.2

Table (6): Comparison between AKA positive and AKA negative groups according to the disease parameters

	AKA+ve / N= 23		AKA-ve / N= 7		t	P
	\bar{X}	$\pm SD$	\bar{X}	$\pm SD$		
Age / yrs	41.5	7.9	39.7	9.1	0.5	* <0.05
Disease duration yrs	7.0	4.5	3.4	1.6	2.0	* <0.05
MS/ minutes	28.0	17.6	21.3	20.2	0.9	* >0.05
GS/mmHg	111.5	19.9	133.6	14.4	2.7	** <0.05
AI	33.9	10.3	23.6	5.8	2.5	** <0.05
VAS	5.6	1.8	3.1	1.2	3.4	*** <0.001
ESRmm/hour	56.1	21.9	25.7	9.8	3.5	** <0.05
Hb%	11.2	1.2	11.9	0.7	1.3	** >0.05
RF	113.5	55.4	20.7	19.9	4.3	*** <0.001

MS = morning stiffness.

GS = Mean grip strength.

ESR = Erythrocyte sedimentation rate.

t = Student-t test value.

AI = Articular index.

VAS = Visual analogue scale.

HB% = Haemoglobin percent.

N = Number.

* = Insignificant difference.

** = significant difference.

***= Highly significant difference defiance

Table (7): Comparison between the titre of AKA in RA patients according to their sex.

	Female RA patients			Male RA patients		
	Number	X̄	±SD	Number	X̄	±SD
AKA titre	21	1089.5	855.1	9	568.9	340.5
t	1.8					
P	<0.05 significant.					

T = Student t test value

Fig (8): Comparison between the titre of AKA in RA patients according to their sex.

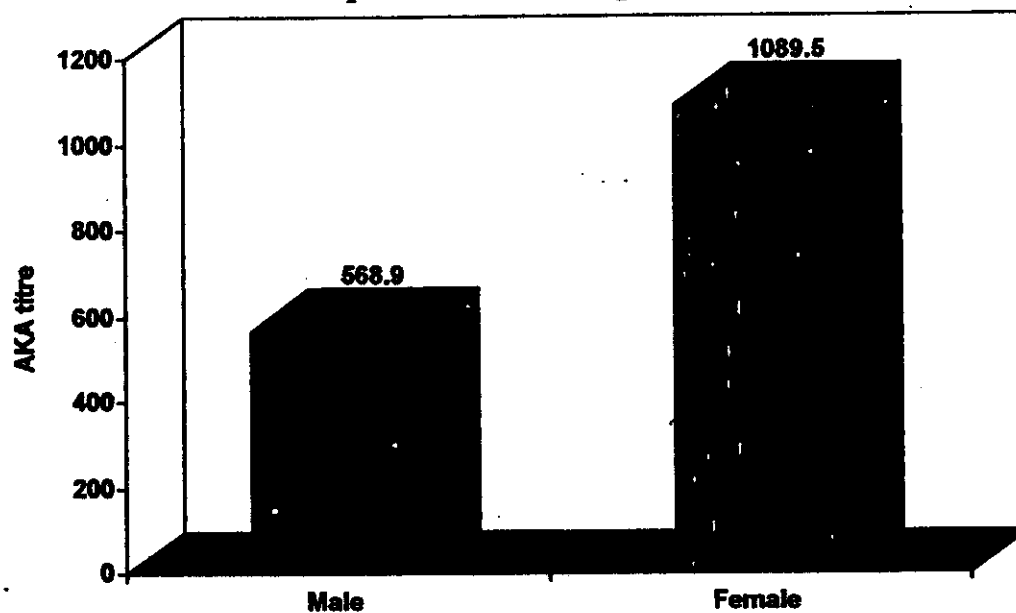


Table (8): Comparison between the titre of AKA in RA patients in relation to their functional capacity.

Grade	G I			G II			G III			G IV		
	N	X	±SD	N	X	±SD	N	X	±SD	N	X	±SD
AKA titre	5	288.0	208.6	13	516.9	321.0	10	1472.0	607.2	2	2560.0	0
F	22.9											
P	<0.001 Highly significant.											

N= Number

Fig (9): Comparison between the titre of AKA in RA patients in relation to their functional capacity.

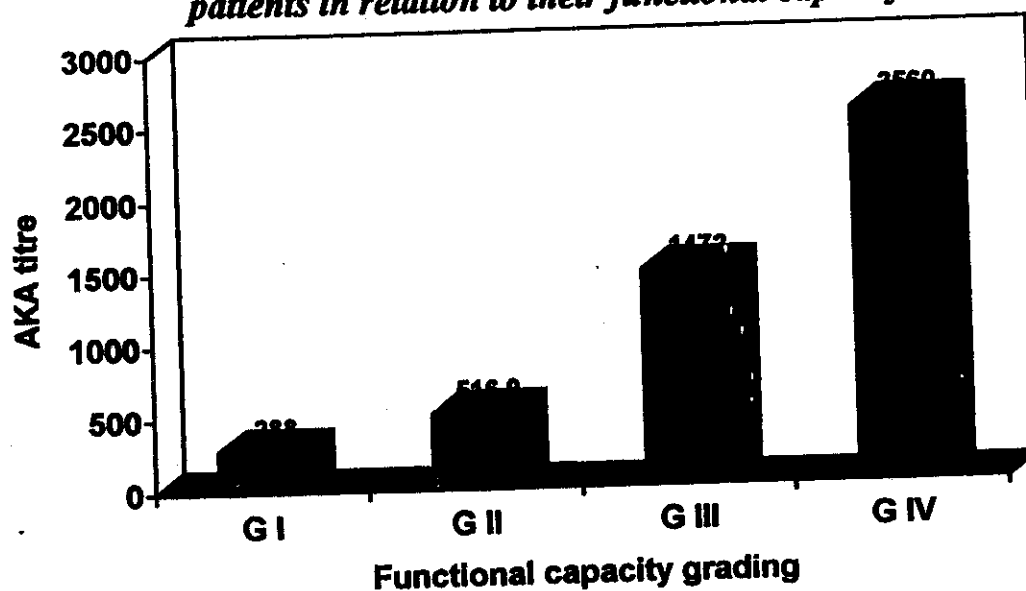


Table (9): Comparison between the titre of AKA in RA patients in relation to their radiological grading of severity.

Grade	G I			G II			G III			G IV		
	N	X̄	±SD	N	X̄	±SD	N	X̄	±SD	N	X̄	±SD
AKA titre	6	186.7	65.3	11	523.6	203.5	7	1462.9	483.8	6	1813.3	850.7
F	18.7											
P	<0.001 Highly significant.											

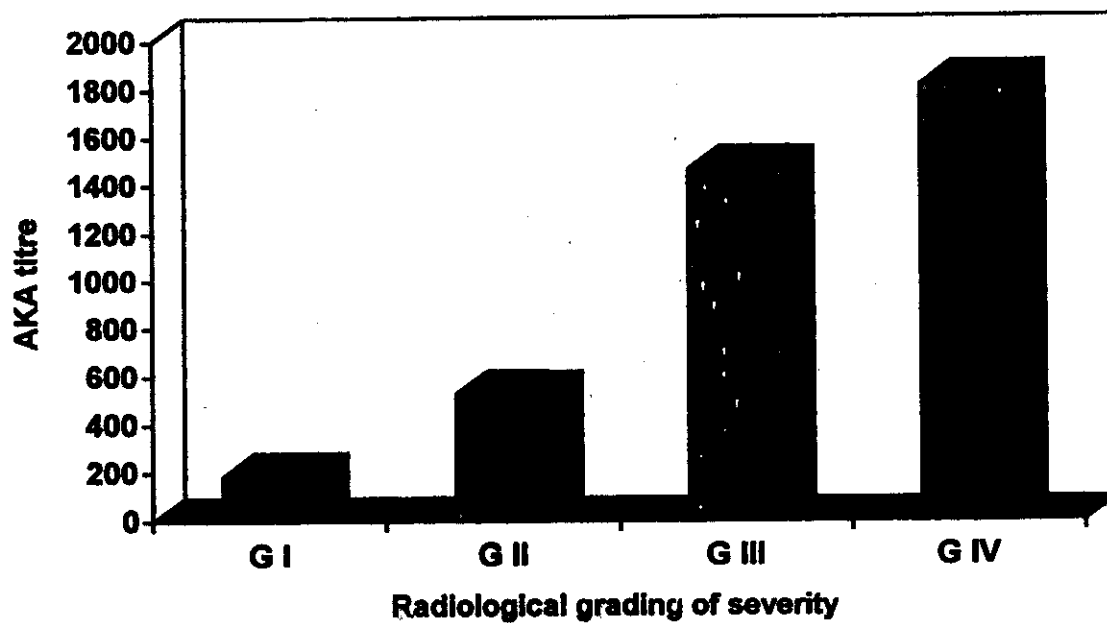


Fig: (9)

Table (10): Correlation coefficients between the clinical, laboratory and radiological variables of RA patients in relation to their AKA titres.

	AKA titre	P
Age	0.26	*>0.05
Disease duration	0.01	*>0.05
MS	0.69	**<0.001
AI	0.66	**<0.001
GS	- 0.56	**<0.001
FC	0.71	**<0.001
VAS	0.66	**<0.001
ESR	0.63	**<0.001
RF	0.43	**<0.001
HB%	- 0.45	**<0.001
RG	0.72	**<0.001

Critical value of (r) = 0.31

MS = Morning stiffness.

AI = Articular index.

GS = Mean grip strength of both hands.

FC = Functional capacity

VAS = Visual analogue scale.

ESR = Erythrocyte sedimentation rate.

HB % = Hemoglobin percent.

RG = Radiological grading

* = Insignificant correlation

** = Highly significant correlation