

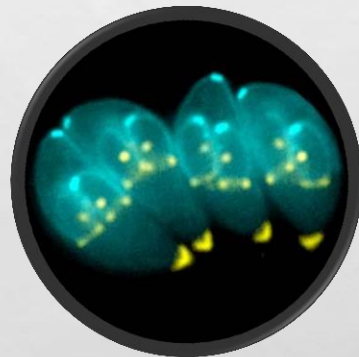


Serological evidence and risk factors of toxoplasmosis in a sample of pregnant women in UAE

INTRODUCTION

- *Toxoplasma gondii* (*T.gondii*) is considered one of the most widespread parasites in the world (1,2).
- The severity of *T. gondii* infection in humans depends on host factors, such as immunity and genetic background. (3)
- *T.gondii* causes significant morbidity and mortality in congenitally infected infants, (4) immunocompromised persons, (5) and transplant recipients.

The seroprevalence of *T. gondii* antibodies in pregnant women can vary from 6.1 to 75.2% based on the geographical region (6). congenital toxoplasmosis can occur as a primary infection acquired during pregnancy (7).



AIM OF THE STUDY

To :

- 1) assess the frequency of toxoplasmosis among a sample of pregnant women who attended the antenatal care clinics in Al Kuwait hospital, Sharjah -UAE.
- 2) identify the risk factors for development of toxoplasmosis and
- 3) evaluate the utility of a new version of western blot assay to confirm *Toxoplasma* infections.

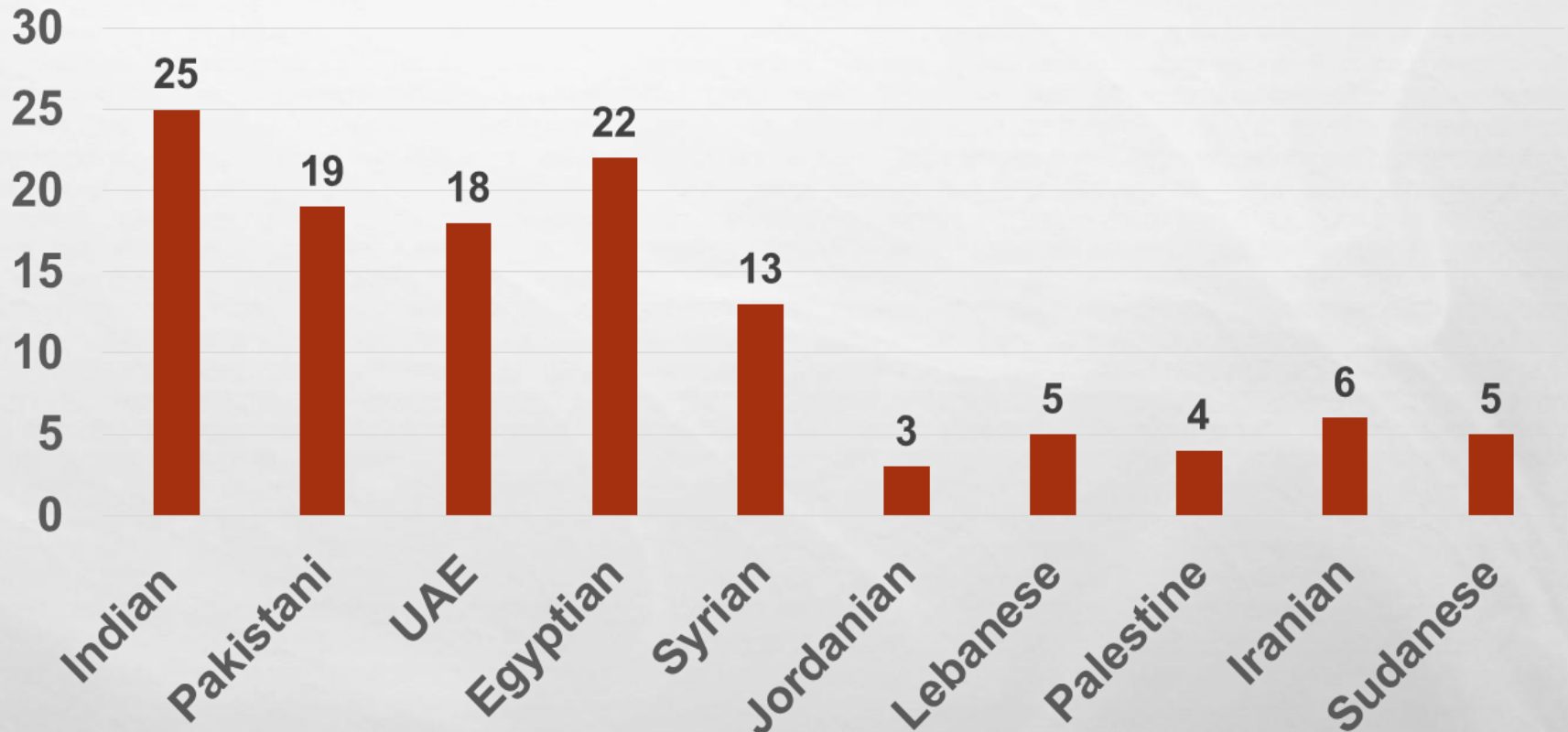
SUBJECTS AND METHODS



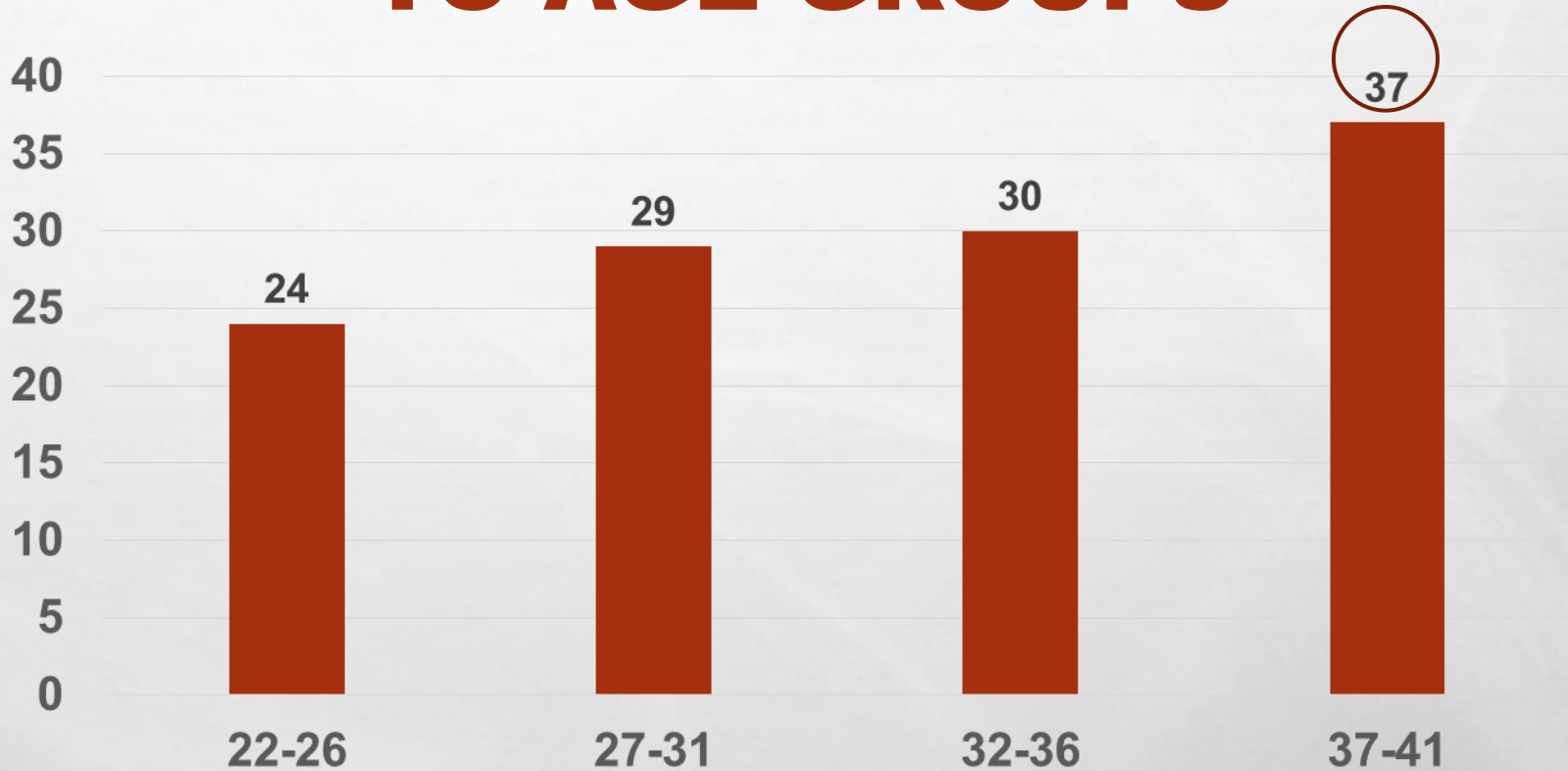
PARTICIPANTS

- One hundred fifty pregnant women were informed about the study and 120 women agreed to participate, mean age (SD±) 34.32 ± 6.401 .
- They were classified according to nationality and age groups.

PARTICIPANTS ACCORDING TO NATIONALITY



PARTICIPANTS ACCORDING TO AGE GROUPS



QUESTIONNAIRE

One epidemiological questionnaire was elaborated to register aspects related to the possible risk factors for development of toxoplasmosis and history of complicated pregnancy.



1. Age.

2. Nationality.

3. History of blood transfusion Yes/ no

4. Contact with animals "cats" Yes /no

5. Area of residency for nonlocals (in their own countries) Rural/Urban

6. History of consumption of insufficiently cooked beef Yes/no

7. History of complicated pregnancies. Yes/no

If yes please verify:

1. Abortion (number)

2. Still birth (number)

3. Congenital anomalies (number) etc...

SERUM SAMPLES

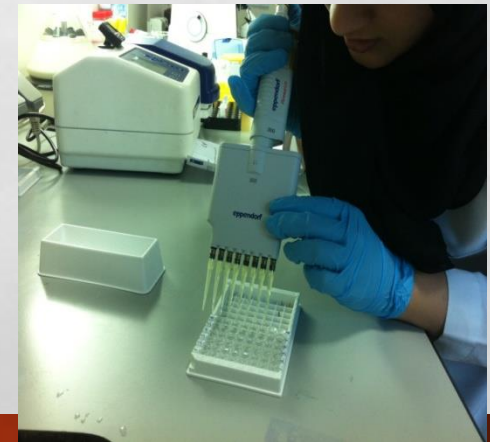
Blood samples were collected. ELISA test kits for detection of anti- *Toxoplasma* IgG and IgM were used to screen the samples and western blot analysis was used to confirm the positives.



SCREENING ELISA

ELISA test kits (Diagnostic automation company-USA)

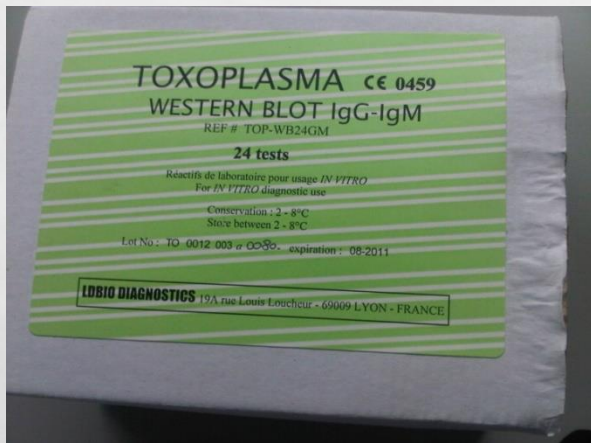
(REF # 9071-11 & 1102z for IgG and IgM respectively)



WESTERN BLOT (WB)

WB WAS USED TO CONFIRM THE ELISA POSITIVE SAMPLES
(LDBIO DIAGNOSTICS –FRANCE)

(REF# TOP-WB24GM)

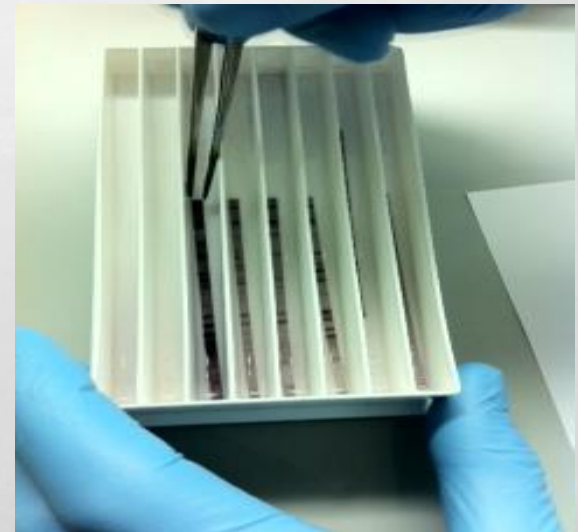


Method

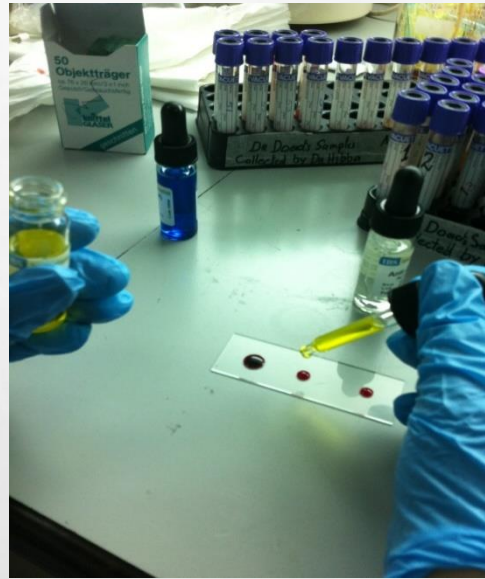
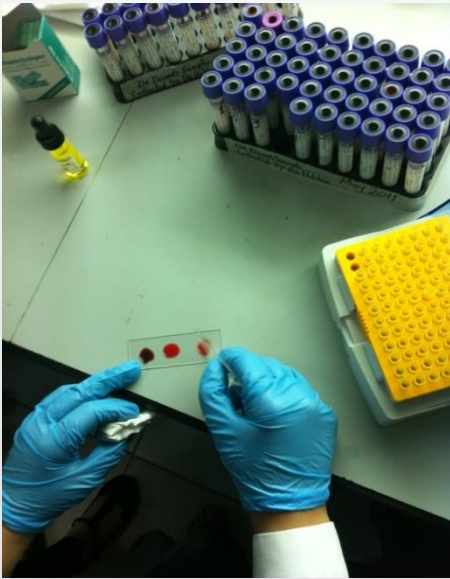
- A distribution plan for control and samples was established before starting the assay.



- The steps of the kit protocol were followed according to the manufacturer instruction.



DETECTION OF BLOOD GROUPS

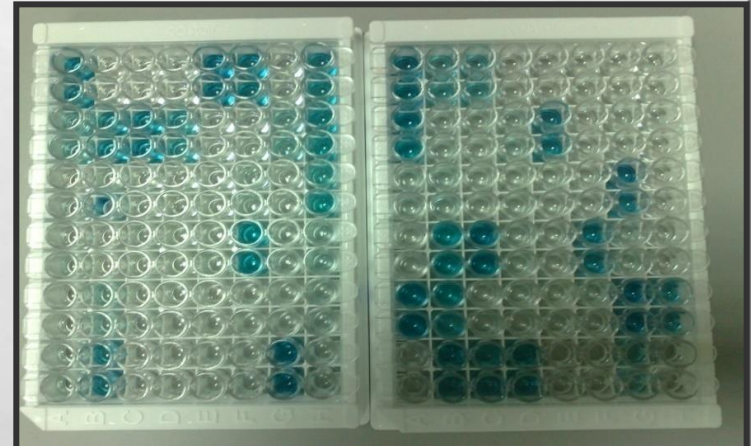
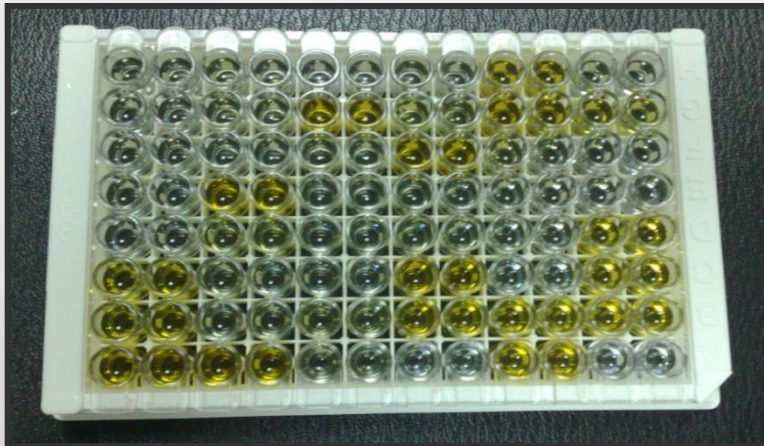


(Eldon cards- Eldon biological AS- Denmark)
(Ref # 304-70)



ELISA Interpretation

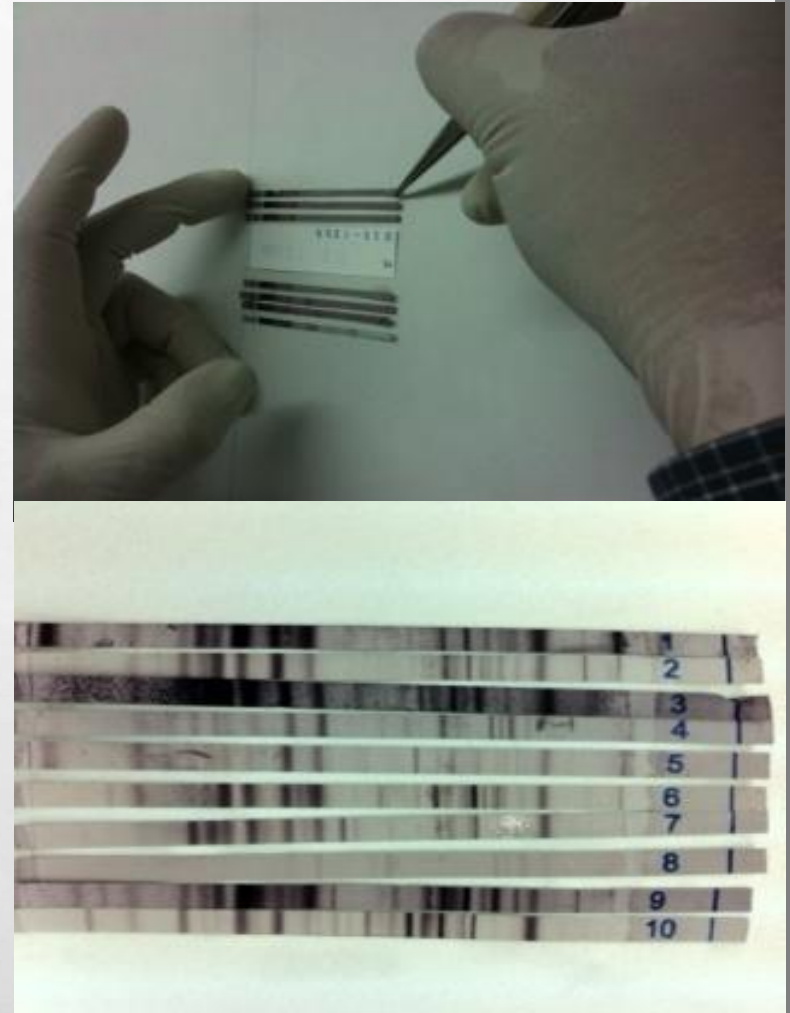
- Expected values: a value of 0.90 or less was considered negative for IgG anti-*Toxoplasma* antibody and a value of 1.00 or more was considered positive:
- A value of 0.70 or less was considered negative for IgM anti-*Toxoplasma* antibody and a value of 0.9 or more was considered positive: equivocal values were not included in the results.



WB Interpretation



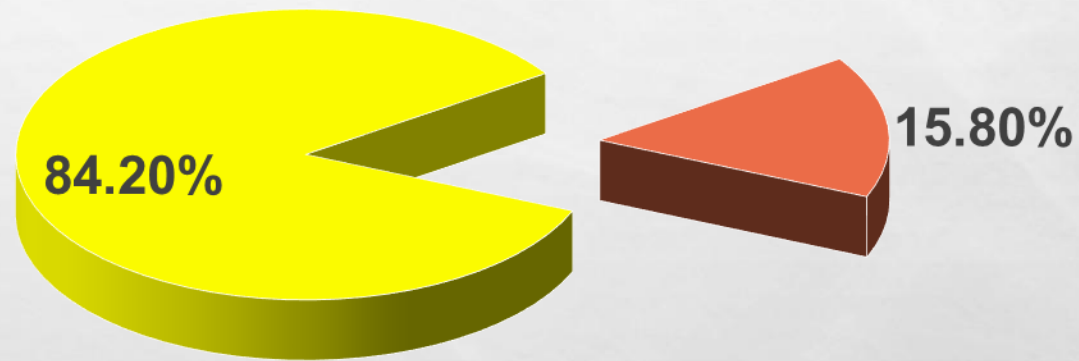
- The reading was done by comparing the results with the positive control strip.
- With MW identification tools ,the presence of 3 or more specific bands on the strip in the range of 30-45kda, including the band 30 kda, confirmed *Toxoplasma* infection.
- WB detected two and three false positive results in IgM & IgG ELISA respectively





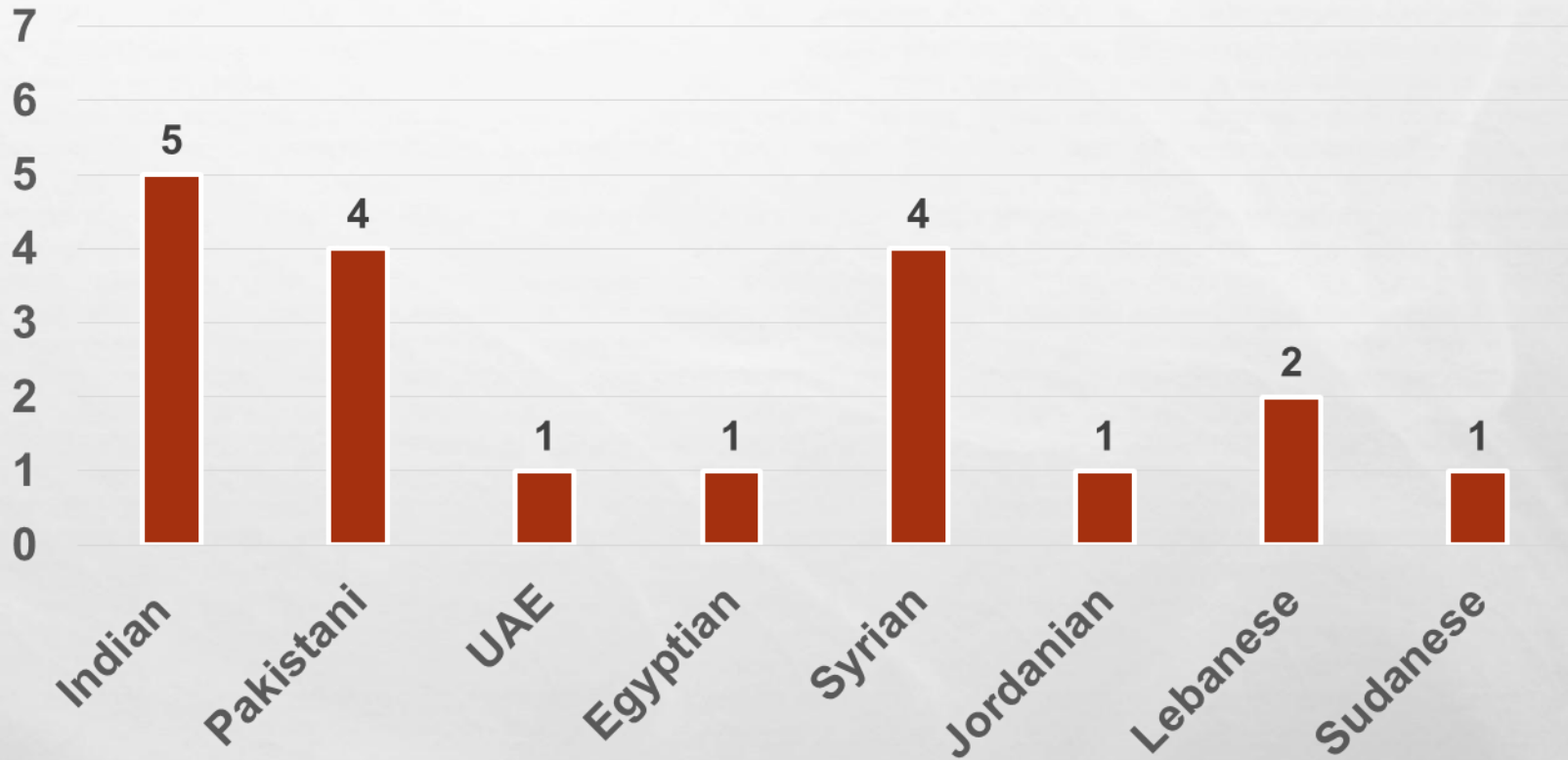
- Data was entered, analyzed and interpreted using spss program version 17, differences in proportion were tested using chi-square
- Value less than 0.05 was considered as statistically significant

POSITIVE PARTICIPANTS FOR ANTI-TOXOPLASMA IGG



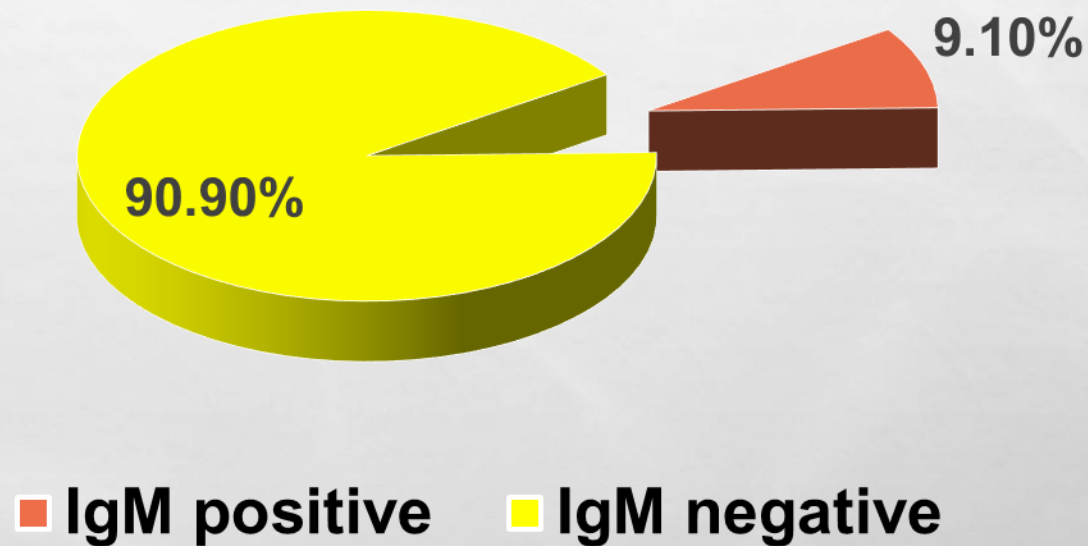
■ IgG positive ■ IgG negative

POSITIVE PARTICIPANTS ACCORDING TO NATIONALITY

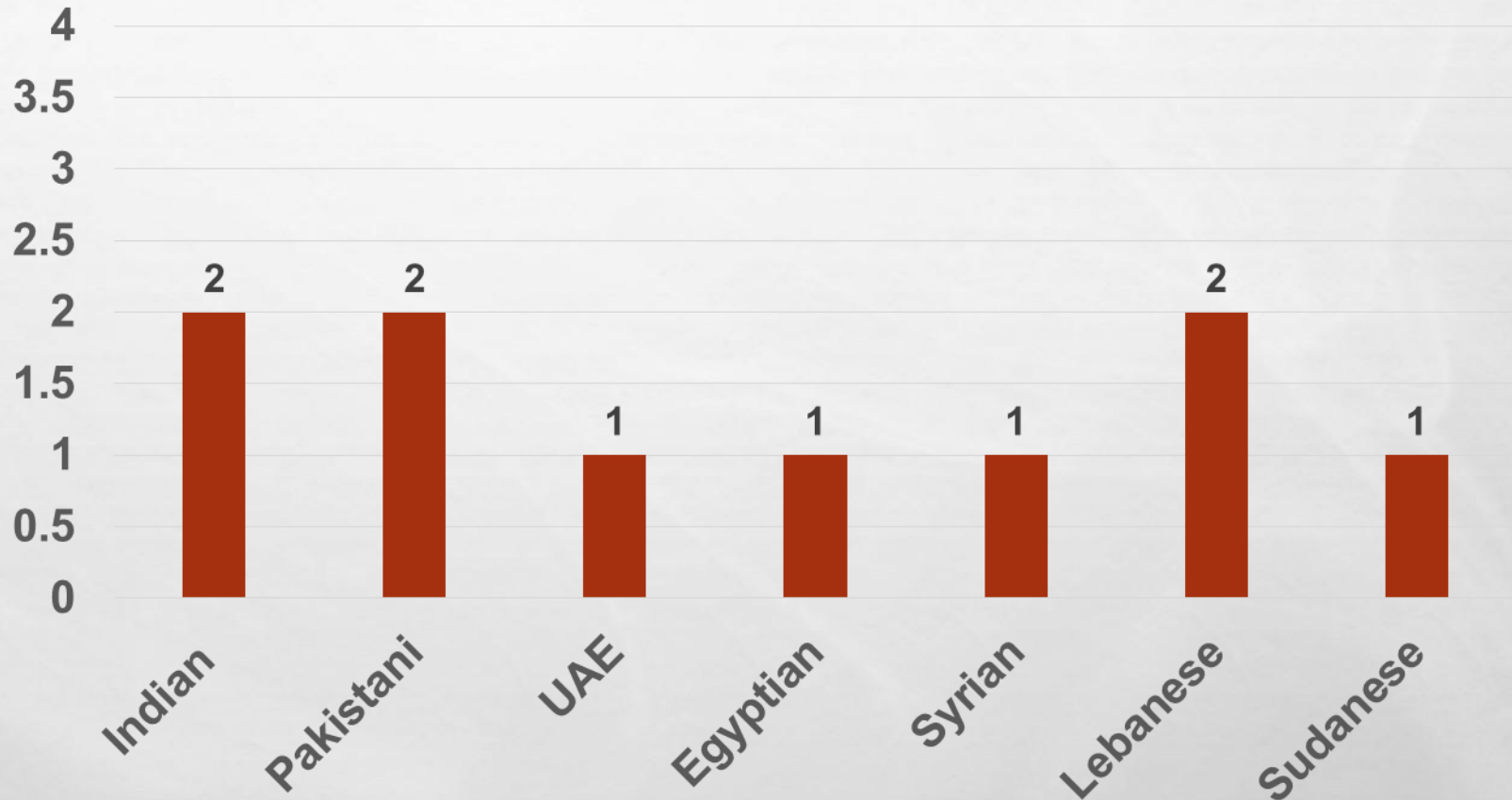


χ^2 7.600
 $P > 0.05$

POSITIVE PARTICIPANTS FOR ANTI-TOXOPLASMA IGM



POSITIVE PARTICIPANTS ACCORDING TO NATIONALITY



χ^2 10.314
 $P > 0.05$

POSITIVE PARTICIPANTS ACCORDING TO AGE GROUPS

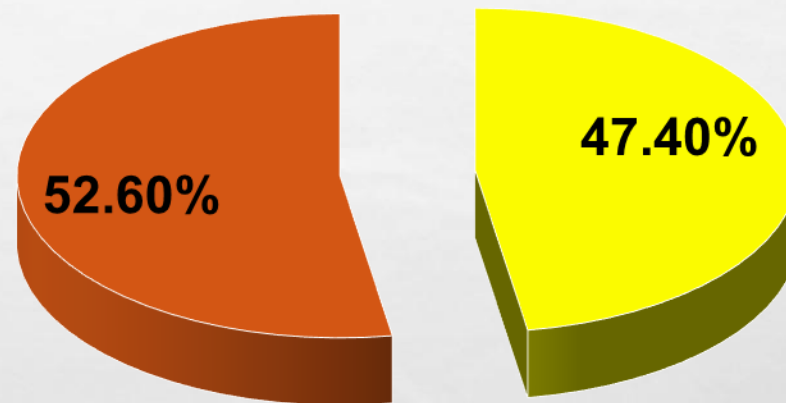
Age groups	Positive	Negative
22-26	5	19
27-31	6	23
32-36	4	26
37-41	4	33

χ^2 17.932
P>0.05

POSITIVE PARTICIPANTS ACCORDING TO BLOOD GROUPS

IgG				X ² / P
Blood Group	Positive	Negative	Total	
A		7	7	
B	5	26	31	
AB	2	29	31	X ² 5.633 P>0.05
O	12	39	51	
Total	19	101	120	

POSITIVE PARTICIPANTS ACCORDING TO HISTORY OF BLOOD TRANSFUSION



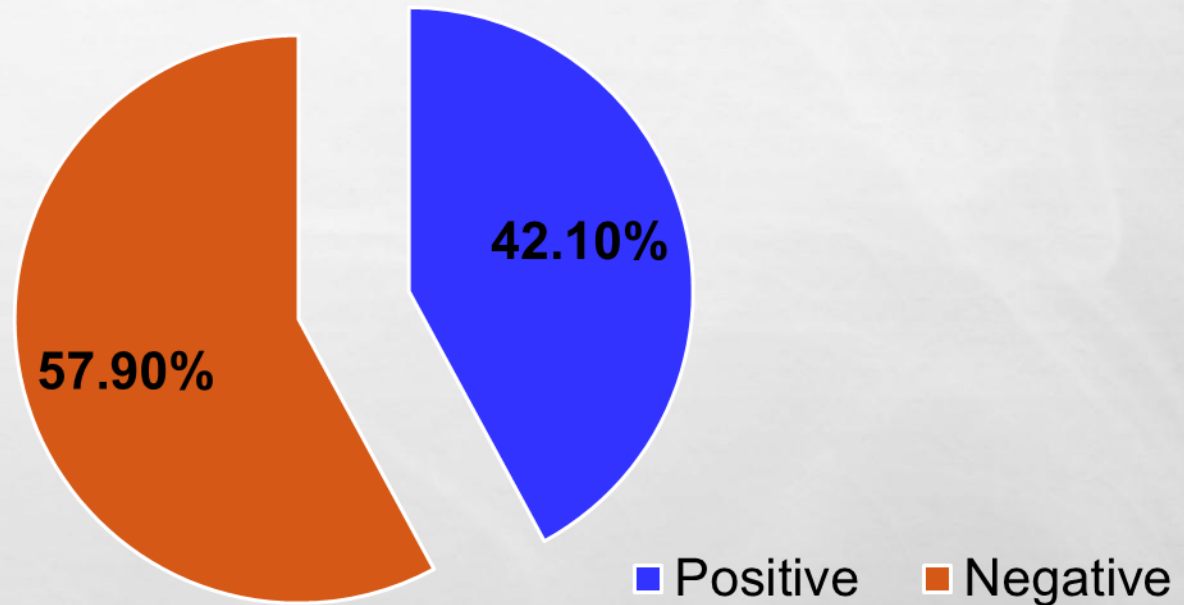
■ Positive ■ Negative

$P > 0.05$

POSITIVE PARTICIPANTS ACCORDING TO HISTORY OF BLOOD TRANSFUSION

Blood transfusion	IgG Positive	IgG Negative	X ² / P
Positive history	9	45	X ² 0.0542 P>0.05
Negative history	10	56	

POSITIVE PARTICIPANTS ACCORDING TO HISTORY OF CONTACT WITH CATS

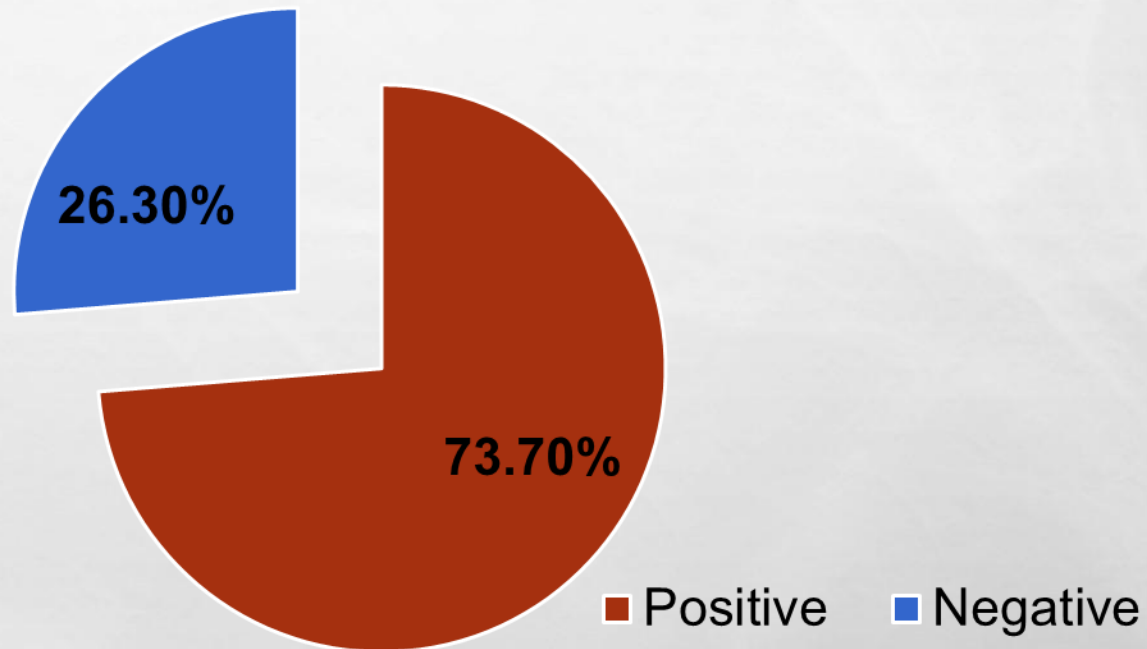


$P > 0.05$

POSITIVE PARTICIPANTS ACCORDING TO HISTORY OF CONTACT WITH CATS

Contacts of Cats	IgG Positive	IgG Negative	X ² / P
Positive history	8	60	X ² 1.9493 P>0.05
Negative history	11	41	

POSITIVE PARTICIPANTS ACCORDING TO HISTORY OF CONSUMPTION OF RAW MEAT

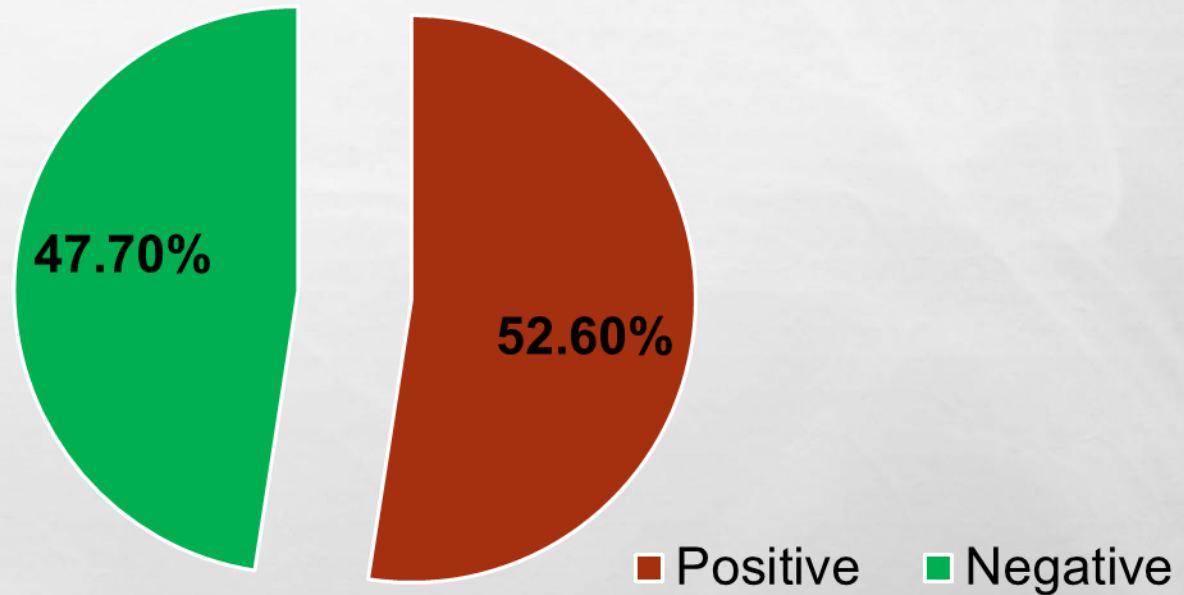


$P > 0.05$

POSITIVE PARTICIPANTS ACCORDING TO HISTORY OF CONSUMPTION OF RAW MEAT

Consumption of insufficiently cooked meat	IgG Positive	IgG Negative	X ² / P
Positive history	14	12	X ² 35.989 P<0.05 ★
Negative history	5	89	

POSITIVE PARTICIPANTS ACCORDING TO AREAS OF RESIDENCY

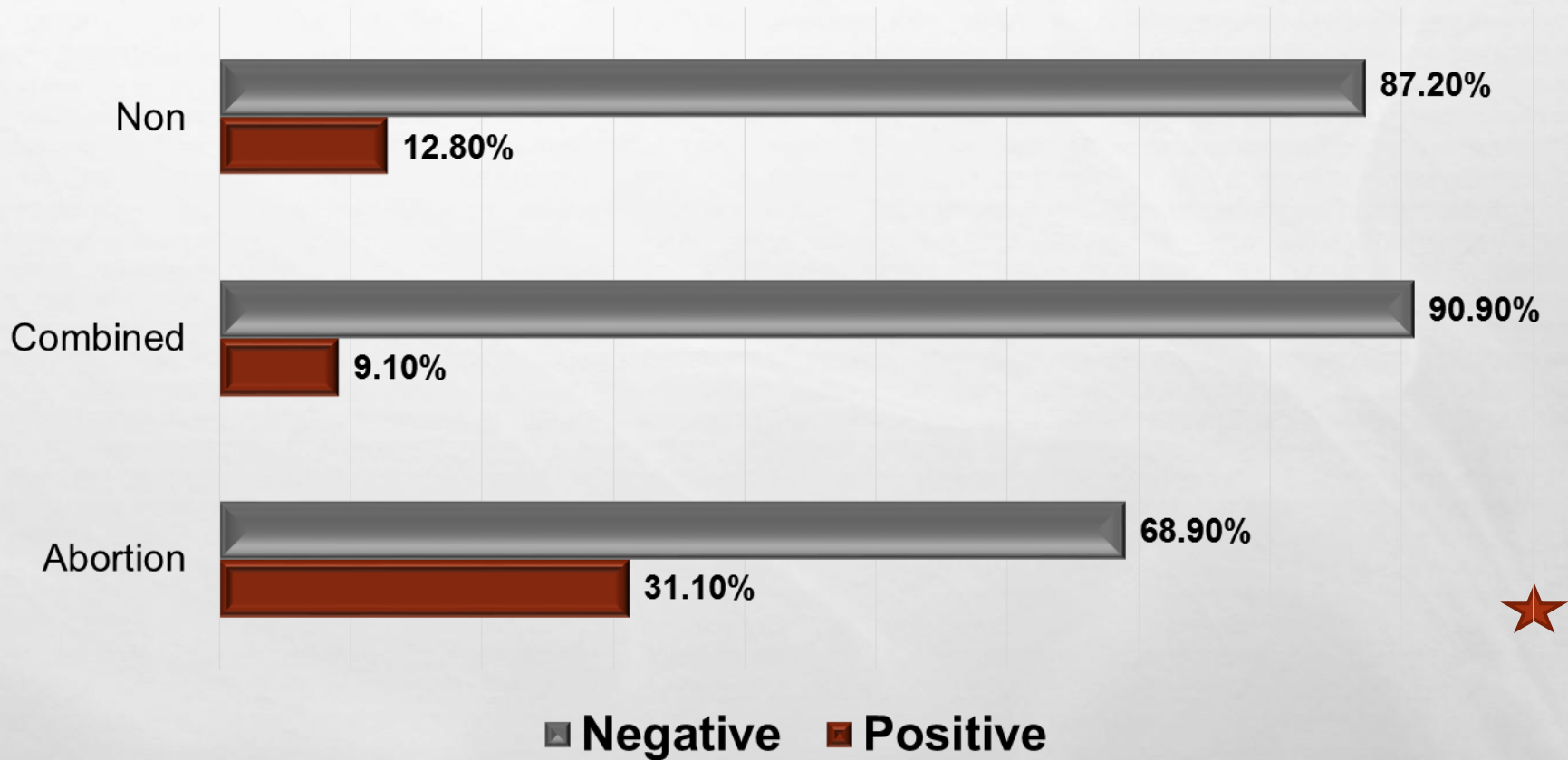


$P > 0.05$

POSITIVE PARTICIPANTS ACCORDING TO AREAS OF RESIDENCY

Area of residence	IgG Positive	IgG Negative	X ² / P
Urban	10	51	X ² 0.0 292 P>0.05
Rural	9	50	

POSITIVE PARTICIPANTS ACCORDING TO MORBIDITY



$P < 0.05$

POSITIVE PARTICIPANTS ACCORDING TO MORBIDITY

Morbidity	IgG Positive	IgG Negative	X ² / P
Positive Abortion	9	20	X ² 6.8613 p < 0.05 ★
Positive combined	4	40	
Negative history	6	41	

WB ANALYSIS & ELISA ASSAY

- THERE WAS A STATISTICAL SIGNIFICANT ASSOCIATION BETWEEN WB ASSAY AND ELISA test RESULTS

$p < 0.05$



CONCLUSION

- The prevalence of *Toxoplasma* infection varies according to the geographical distribution and humans behavior
- Consumption of raw meat was an important risk factor in development of toxoplasmosis in our study
- History of complicated pregnancy was strongly linked to the prevalence of toxoplasmosis
- The western blot kit is a useful tool in the detection of *Toxoplasma* infection on large scale being a simple test with easier steps in comparison to the traditional WB technique

Future plan

- To expand the screening to include other study sites in UAE (other cities)
- To detect the genotypes of *Toxoplasma* in the positive samples and correlate them to the history of fatal outcome of pregnancy

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Thank
You!