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وجود الاجسام المضادة لتثبيت المكمل لكلاميديا في مرضى الجهاز التنفسي بالصعيد

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قد تم تجميع عدد ٦٠ عينة من مصل مرضى الجهاز التنفسي العلوي، وأيضا جمعت ٤٥ عينة من الاشخاص الاصحاء (عينة ضابطة اكلينيكيـا).

تم فحص هذه الأمصال للكشف عن الأجسام المضادة لتثبيت المكمل للكلاميديـا وجد أن هذه الأجسام المضادة موجودة في ٥ (٨٫٣٣٪) من الحالات الحـــادة، ٢(٣٫٣٣٪) في الحالات تحت الحادة، ٦(١٠٪) في الحالات المزمنة ، وأيضا تـــم اكتشاف حالة واحدة من بين الـ٤٥ الأصحاء اكلينيكيـا.

واتضح أن هناك علاقة جديدة بين مرضى الجهاز التنفسي ووجود الاجســـام المضادة لكلاميديا . وقد تم مناقشة الدور الذي تلعبه الكلاميديا كمسبب لأمـــراض الجهاز التنفسي في الانســان.

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COMPLEMENT FIXING CHLAMYDIAL ANTIBODIES OF PATIENTS WITH UPPER RESPIRATORY TRACT INFECTION IN UPPER EGYPT

(With 5 Tables)

By

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SUMMARY

Serum samples were collected from 60 patients with upper respiratory tract infection as well as 45 apparently normal healthy individuals. They were examined for the presence of complement fixing chlamydial antibodies.

The antibodies could be detected in 5 (8.33%) of acute cases, 2 (3.33%) of subacute and 6 (10%), of chronic cases. Only one out of 45 healthy individuals reacted with the test. A good correlation between disease of respiratory tract and C.F. chlamydial antibodies was demonstrated. The possible role of chlamydia as an aetiological agent of respiratory diseases in man is discussed.

INTRODUCTION

Psittacosa infection as aetiology of pneumonia cases was reported by IMAM et al. (1969) and they mentioned that 8 cases (4.9%) out of 162 were due to psittacosis.

FRANSON et al. (1970) found that multiple serological reactions were noted for mycoplasma and chlamydial antibodies in the examined sera.

STEPHENS (1971) observed in severe viral pneumonia that the rising Titre had not been found only to adenovirus but also to C.burnettii and psittacosis antigens.

BLANCO-LOIZELIER and ARCATEQUI-JASO (1977) discussed the results of C.F., precipitation and immunofluorescence tests for the detection of chlamydial infection in the rabbit.

SCHOLZ (1978) described the taxonomy and characteristics of chlamydia and method of diagnosis.

MILON and GERAL (1978) studied the relationship between complement fixing antibodies and immunoglobulins during parturition of ewe experimentally infected with chlamydia. Also, fuensalida-DEAPER and RODOLAKIS (1978) observed that infected Ewes with chlamydia gave antibody titre with the C.F. and immunofluorescence tests.

CRIMES and PEGE (1978) studied the detection of chlamydial antibody in serum samples of wild birds by the comparison of direct and modified complement fixation and agar-gel precipitation methods.

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SAVOSINA and POPOVA (1979) observed that prepared antigen from avian strains of chlamydia psittacosa can be used in C.F. test to distinguish ornothosis from other chalmydial infections and for the early diagnosis of ornithesis.

LEFEVER et al. (1979) were able to detect complement fixing antibodies to chlamydia ovis in abbatoir workers which complained with acute respiratory disease, Joint ill and inflammation of the female genital system. STEPANEK et al. (1980) found that antibodies were present in some animal attendents.

GOROVITS and TIMASHERA (1981) noticed that the diagnostic procedure in human patients required a combination of immunofluorescent microagglutination and C.F. tests.

NURMIMEN (1983) reported strong immunological cross reaction between a major glycolipid antigen of chlamydia and the innermost core of the lipoplysaccharide of enteric bacteria. They found that the chlamydial glycolipid resembled lipopolysaccharide in molecular size, solubility, and endotoxic properties and might be equivalent to lipopolysaccharide an essential and characteristic component of the outer membrane of gramnegative bacteria. The present work was conducted as a trial to evaluate the use of C.F. test for the detection of chlamydia in upper Egypt on a group of patients suffering from respiratory tract infection and a control healthly group.

MATERIAL and METHODS

A total number of 60 cases admitted in Assiut University Hospital were selected for this work. From the records age, onset and type of chest trouble as well as the season of occurrance were cited for interpretation.

Serum samples were collected from the 60 petients as well as from 45 apparently normal healthy individuals.

Detection of complement fixing antibodies against chlamydial antigen was done by microtitration. The modified Micro-technique of C.F. test adopted in the present work was carried out in accordance with the procedure deseribed by EDWIN (1969). The scheme for its performance is shown in Table (1).

The antigen used in this technique was supplied by Behring institute, west Germay.

RESULTS

Screening complement fixation test was carried out for all sample at dilution of 1/4 and it was noted that the percentage of positive reactors was high in both acute and chronic cases (8.33% and 10% successively) while it was only 3.33% in chronic cases as denoted in Table (2).

From Table (3) it was observed that complement fixing antibodies for chalmydia in age groups of 10 to 30 years was present in a greater percentage than any other age group. Only one of 45 apparently normal individuals showed complement fixing anibodies. In all positive cases the number decrease with the increase of antibody titre as shown in Table (4).

From Table (5) it was denoted that antibody detected in patients in contact with animals and birds are more than those living far away from animals and birds.

DISCUSSION

The disease, when first described by RITTER in 1879, was reported as illness which involved five members of his brother's house hold and two visitors; three out of the seven patients died and they were associated with parrots and finches. In the United States VICKERY and BIOHARDSON (1904) described an illness affecting three of four family members after exposure to a sick-green parrot.

MAYER et al. (1942) reported that pigeons could serve as reservoir for psittacosis and recommended that the disease be termed, ornithosis to indicate that birds other than psittacines could serve as vectors for the disease.

HENRY and CROSSLEY (1986) reported that 10% of infected cases were in association with pigeons while in our investigation it was observed that 20% of patients associated with animals and birds were positive for chlamydial complement fixing antibodies while only 1.66% were positive in patients living faraway from animals and birds. These findings indicate that both animals and birds play an important role in the transmission of the disease as reported by DEKKLING (1970).

In Egypt IMAM et al. (1969) found that 4.9% of pneumonia cases were due to chlamydia. This percentage is lower than that reported in our investigation, where 8.33% were positive in those patient suffering from acute respiratory infection and 10% in chronic pneumonic cases while only 3.33% in subacute cases. In case of apparently healthy individuals only 2.22% were positive for C.F.T.

LEFEVER et al. (1979) repoted that Chlamydia ovis causes acute respiratory disease, joint ill and inflammation of the female genital system among the workers in abbatoir and they found that the complement fixing antibodies were present in 14% of abbatoir workers. This percentage is almost similar to that reported in our work (12.38%). However, the latter percentage is somewhat higher than that reported by STEPANEK et al. (1979), since they detected complement fixing antibodies, in 7.5% of animals attendents at high risk.

In Egypt SCHOLZ et al. (1978) reported in a serological survey on chlamydial antibodies in domestic ruminant that antibodies were detected in 42.5% of buffaloes, 24% of cattle, 11% of camel, and 6% of sheep. This recommended therefqre that a comparative study should be carried out in man and their associated animals especially in rural areas so as to establish the zoonotic nature of this disease.

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Table I

Scheme for performance of the microtitre complement fixation test (Edwin, 1968).

Tube of	Serum ml	Saline ml	Antigen ml	Non specific antigen ml		Complement		Sensitized cells ml	
Serum under test	0.025	0	0.025	0	Shaken and the following was added	0.025	Overnight incubation at 4 C followed by 15 minutes at room temperature	0.050	15-30 minutes at 37°C
Serum control (tested for A.C.)	0.025	0.025	0	0		0.025		0.050	
Serum nonspecific antigen control	0.025	0	0	0.025		0.025		0.050	
Reagent controls									
Complement controls	units								
for specific and	2.0	0.025	0.025	0		0.025		0.050	
non specific antigen	1.5	0.025	0.025	0		0.025 (1:1.5)		0.050	
	1.0	0.025	0.025	0		0.025 (1:2)		0.050	
	0.5	0.025	0	0.025		0.025 (1:4)		0.050	
Haemolytic control	0	0.050	0	0		0.025		0.050	
Sheep cell control	0	0.075	0	0		0		0.050	

Wells containing 2 and 1.5 units of complement showed complete haemolysis, while the wells containing 1.0 unit showed complete to nearly complete haemolysis and the well containing 0.5 unit showed no haemolysis.

Table (2): Positive* cases for chlamydia in different groups according to the course of the disease

Type Nature of samples	Number Examined	Positive cases* No.	%
a. Acute	17	5	8.33
b. Subacute	21	2	3.33
c. Chronic	22	6	10.00
Total	**60**	**13**	**21.66**
Apparently healthy	45	1	2.22

* A titre of 1/4 or more was considered positive.

Table (3): Positive cases for chlamydia in different age group.

Age group of	Number Examined	Positive cases No.	%
Patients:			
3-10 years	16	2	3.33
From 10-30 years	30	8	13.33
More than 30 years	14	3	5.00
Total	**60**	**13**	**21.66**
Apparently healthy:			
3-10 years	10	0	0.00
From 10-30 years	20	1	2.22
More than 30 years	15	0	0.00
Total	**45**	**1**	**2.22**

Table (4): End titre of positive cases according to the nature of samples

Nature of samples	Titre of positive cases					
Disease	1/4	1/8	1/16	1/32	1/64	1/128
a. Acute	5	5	3	2	0	0
b. Subacute	2	2	2	1	0	0
c. Chronic	6	6	5	3	0	0
Appparently heatlhty	1	1	0	0	0	0
Total	**14**	**14**	**10**	**6**	**0**	**0**

Table (5): Distribution of cases according to the association of patients with animals and birds.

Condition of patients	Examined cases No.	%	Postive cases No.	%
Patients:				
In contact with	44	73.33	12	20.00
Not incontact	16	16.66	1	1.66
Apparently healthy:				
In contact with	20	44.44	1	2.22
Not in contact	25	55.55	0	0.00