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Some Remarks about M. C. F.[1] and other Methods of Complement Fixation Test for Syphilis

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Although the T P I test indicated in 1937 by Nelson and Mayer is actually a useful aid for the detection of syphilis; it fails to make any special help in the first and second period in comparison with serology with lipid antigen. The methods of complement fixation test for syphilis are multiple and for this reason of multiplicity it is difficult to give in a short article the details of each technic; so, it is better to give the characteristics of each group regardless of reagents.

The wide variety of the complement fixation technics for syphilis now in use, represent different combination of the same group of variable; every one of which must be properly adjusted for obtaining the optimum results. The enormous methods of complement fixation test for syphilis may be divided in three main groups regardless of the reagents and according to the manner of incubation:

1. Methods which use 37° c. incubation for a period of one or one hour and the half.

2. Methods which use ice-box incubation for 18 hours.

3. Methods using agitation for sensitization of antigen.

In methods using ice-box incubation for one, or one hour and the half, a diminution of both complement and reagin will take place dur-

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ing the time of incubation. As it is well known, not only the dilution by itself is a factor of loss of complement activity; but a long time of incubation at 6°- 8°c. gives growth of bacteria and yeasts and consequently the third component of complement is absorbed or transformed by enzyms rendering it inactive without the participation of specific antibody.

It is certainly for this reason that the Kolmer complement fixation test gives more positive results than any other similar method. In the incubation at 37°c. method not only there is no proof that a regular binding of antigen and reagin will take place, but there is always a loss of complement, and without having any exact indice about the degree of loss, it is dangerous to add two or more units of complement to the test.

It seems that the agitation procedure of complement fixation is more reliable and based upon serological and immunological principles. The action of shaking upon floculation and agglutination is well known in enhancing the combination of antibody molecules with antigen particles. The same mechanism may be true for complement fixation, therefore, shaking the mixture can have a great influence on the quick and regular binding of antigen particles to antibody molecules.

It is evident that the basic reaction on any serologic test for syphilis is the same; particles of tissues lipoid used as antigen combined with reagin which is probably deposited around the lipoid particles.

Presumably as it is the case for floculation reaction the cohesion of the reagin coated particles with complement is enourmously accelerated by shaking; in the complement fixation tests, if, however, the condition of experiments are suitable, the sensitization of antigen particles is enhanced and thus, an accurate and rapid complement fixation can be obtained in a rather short time.

In order to benefit from the action of shaking in the complement test, for syphilis, many workers such as Hombria, Zü, Navaro-Martin, Portella initiated the tests in which the mixture of serum-antigen-complement has been shaken.

But, in all proposed methods, the total volume of the test, the time and manner of agitation, the temperature, the manner of haphazard mixing serum-antigen-complement are not in complete accordance with immunological and serological principles.

Having in mind that a suitable shaking of ingredients, first of all serum-antigen, then the complement, can have a better and more regular binding of antigen particles and antibody molecules and consequently a better complement fixation the M.C.F. methods is developed. In this method the flat bottom tubes containing a glass bead, the total volume of 0/5 cc., concentrated antigen and rotation at a speed of 120 revolutions per minute in 35°c. are used. Considering that the complement has a loss of affinity for antigen or antibody alone and in contrary, a great affinity for sensitized antigen, in the proposed method the complement is added after 10 minutes agitation of the mixture of sensitized antigen, in the proposed method the complement is added after 10 minutes agitation of the mixture of antigen-serum mixture. By this way a regular and quick sensitization of antigen will take place, therefore the test is more sensitive than any other procedure.

CONCLUSION

The modified complement fixation (M. C. F.) test for syphilis, is based upon immunological and serological principles; it is more reliable than any other similar method for the diagnosis of syphilis.

CONCLUSION

La réaction de fixation du complément modifiée(M. C. F.)est basée sur les principes immunologiques et sérologiques; elle est plus sûre que les autres méthodes semblables pour le diagnostic de la syphilis.

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Contribution à l' Étude de «Bejel» en Iran

Rapport Préliminaire*

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Nous savions déjà que la syphilis endémique «Bejel» existe en Iraq chez les arabes habitants le long des deux rivières «Tigre» et «Euphrat» et surtout la maladie persiste avec une grande fréquence aux environs des deux marais «Emareh» et «Hourol-Azim» situés sur la frontière de l'Iran. Ainsi suivant les constatations géomédicales, il nous paraissait certain que la maladie devait exister aussi en Iran et que les endroits les plus suspects seraient aux environs de «Hourol-Azim» c'est à dire sur la rivière «Karkheh» et ses branches, où les conditions sont identiques.

Dans un voyage d'étude sur la bilharziose vésicale et d'autres maladies endémiques de «Khousistan» en 1954, nous avons choisi une partie de cette région pour faire l'étude de Bejel, et, comme nous avions prévu, nous sommes réussi de retrouver la maladie et de faire une enquête sur la fréquence dont nous publions ici les informations préliminaires.

La région étudiée est la province de «Dacht-Michan» avec, comme centre, la ville de «Sussanguerd», située sur la rivière de Karkheh à soixante kilomètres du côté nord-ouest d'Ahvaz (capitale de Khousistan)

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