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COMPLEMENT REACTION  
IN LEPROSY. ACTIVATION  
BY POTASSIUM IODIDE

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COMPLEMENT REACTION IN LEPROSY. ACTIVATION BY  
POTASSIUM IODIDE \*

By J. M. GOMES and P. C. DE AZEVEDO ANTUNES

In 1929, while we studied the effects of the administration of potassium iodide to lepers for the purpose of obtaining a complement reaction (the fat free bacillus of Deycke being used as antigen) we had occasion to note that, almost all cases were activated, so that individuals with a previous negative serum reaction, in spite of the existence of some symptoms of leprosy, became positive cases.

The activating reactions in syphilis, which seem an accepted fact to most clinicians, are still doubtful to some investigators, who, at least wish to diminish greatly their importance.

Thus David Belding noted greater reactions in only 3.3 % among 338 syphilitic patients, under various forms of stimulating treatment.

In our first paper on this subject, in reference to leprosy, we had stated the fundamental importance of the dosis and time, of the activating treatment.

Two grams of potassium iodide daily, during a week, seemed to us indispensable to obtain the desired result.

In every paper, where a new method of treatment is recommended, the authors are influenced, to some extent, by their good will. They are sometimes led to give a greater emphasis to their conclusions.

However, in this as in our first report, our conclusions are based on most carefully collected facts. The clinical examinations were made at the "Inspectoria da Leprosia" at the time when we worked there, and the complement reactions (Gomes reaction) were made at the "Instituto de Higiene" by Dr. Fleury da Silveira, head of the serological department, who had no knowledge, whatsoever, of the patient's clinical symptoms.

We have continued to apply this test in doubtful cases of leprosy, and have noted its great value for the detection of latent cases.

One of us, published recently (Brasil-Medico, 18-7-1931), a report on 13 cases of individuals in contact with lepers, observed during several years. This report shows, that the complement reaction test, had been studied and found satisfactory by previous investigations : all the cases examined years before had shown the presence of acid fast bacilli in their lymph glands or nasal mucus ; or they showed some vague clinical symptoms.

In many of these, the complement reaction test for latency, was positive only after the administration of potassium iodide.

Thus, the adoption of this method for the examination of individuals in contact with lepers will help the sanitarians to keep them under closer observation and even to treat them prophylactically.

One case, however, needs better understanding. Some paradoxical results were noted in our 1929 report : *positive complement reaction cases, became negative after the administration of potassium iodide.*

\* Read before the "Soc. de Biologia de S. Paulo", at the session 8-9-1933.

We had told of these results without being able to draw any definitive conclusions on this subject, and we had waited for further facts to explain them.

It was shortly afterwards that we observed the following case : On Spt. 24th., 1929, we examined a 21 years old girl, sister of a leper, and living in his company. The clinical and bacteriological examinations were negative. The complement reaction was positive (++).

After the administration of potassium iodide it became negative.

On January 9th. 1931, she was examined again. She was married, and has a baby 4 months old. She had cloasma and no other symptoms. Normal sensibility, negative nasal mucus, good general conditions. Complement reaction positive (+).

This case strengthened our opinion that a complement reaction test, positive before, and negative after the administration of potassium iodide, indicated immunity.

No one at all, familiar with the study and practice of leprosy, can forget what exacerbation a pregnancy and delivery may mean to a latent leper.

The advice, given by old and modern clinicians to women, in reference to tuberculosis and marriage, applies to leprosy.

When a woman, considered as a possible leper, stands well the ordeal of delivery, it has the value of a biological test.

In this case there was still a positive complement reaction (+), but later it disappeared and the patient kept in perfect condition.

Besides this, we have other cases in our files, which in the lack of an anergic test, have the value of many years of observation.

M.B.R. 30 years. Examined in Oct. 1929. In contact with her husband, who suffers from cutaneous leprosy for about 5 years. Clinical examination negative. Nasal mucus negative. Complement test positive (++) . After K.I., negative. The blood of this patient was examined at the same time as the blood of her brothers, who were cases of latent leprosy. The results were exactly the opposite.

There is, in this case, another argument against the idea of latency until the age of 12, that is vaccination.

Any possible infection before that date, would have broken out with the anergy produced by vaccination. After that time, domiciliary contagion became impossible, because the patient who was her mother, was cured.

Thus, it is a fact, that she cannot in the least be suspected of being a leper.

A.M. 24 years. Examined on 2-6-930. Sister of the above. Clinically no symptoms. Nasal mucus negative ; Gomes reaction positive (++) . After K.I., negative. She has kept, up to date, in the same condition.

In the endeavor to understand better these facts, we used the same method on the children kept at the "Asilo de Carapicuibá", sons of leprous parents, but who had no clinical symptoms, and in whom the nasal mucus had been negative. In this group, there was no case in which the Gomes reaction became positive, after the administration of potassium iodide.

All cases may be divided into two groups in accordance to their complement reaction : a) negative before and after ; and b) positive or doubtful before, and doubtful or negative afterwards, while the second test is al-

ways weaker than the first. Only these last cases have some interest for our studies and we shall report them :

L.S.P. 14 years old, white, Brazilian. A resident for 2 years. Had a leprous mother. Complement reaction positive (+++). After K.I., negative (?).

A.P.P.S. 9 years, white, Brazilian. 2 years residence. Has leprous mother. Complement reaction, positive (+). After K.I., negative (?).

A.M. 5 years white, Brazilian. A resident for 2 years 9 months. Has a leprous mother. Complement reaction, negative (?). After K.I., negative.

R.Z.Q. 11 years, white, Brazilian. A resident for 1 year. Father is a leper. Complement reaction positive (++). After K.I., negative.

M.F. 14 years, white, Brazilian. A resident for 4 years. Father is a leper. Complement reaction, negative (?). After K.I., negative.

F.A. 13 years, white, Brazilian. A resident for 1 year. Father is a leper. Complement reaction, negative (?). After K.I., negative.

Our complement reaction test is not absolutely specific. Some co-fixations have been reported by us, but their number is very limited. This depends on the method used to free the bacilli from their fat, which must be insisted on up to the point where, no more than 10 acid resistant bacilli can be counted in each microscopical field.

Looking over our files we noted 4 cases in which the administration of K. I. dissipated these difficulties. Cases, where the complement reaction was positive in individuals not affected with leprosy became negative after K. I.

They are as follows :

A.M. Examined on 8-6-930, 42 years old. At 18 or 19 he had sores which seem to have been venereal. For 20 years he has had some reddish desquamative lesions on his face. No disturbance of the sensibility. Normal cubital reflexes. No contact with lepers. Nasal mucus, negative. Cutaneous lesion, negative. Gomes positive (+++). Examined again on 14-11-930. Appearance just the same. Nasal mucus, negative. Gomes positive (+++). After K.I., negative.

Diagnosis: chronic eczema.

L.M. 64 years. Examined on 25-2-931. Facial seborrhéa. Sensibility, normal. Nasal mucus, negative. Gomes positive (++). After K.I., negative.

Diagnosis: seborrhéa.

A.G. 39 years. Examined on 1-7-930. Has had 3 children and 3 miscarriages. The last one was in 1925. In december 1929 she had itching eruptions on the arms, breast and abdomen; these have now disappeared. Normal cubital reflexes. Dry skin. Normal sensibility. No contact with lepers. Nasal mucus positive (+) (the bacilli grow well on glycerin gelose). Kahn reaction positive (++); Gomes reaction positive (+). After K.I., Kahn positive (+++); Gomes negative.

Diagnosis: syphilis.

J.B. 46 years. Examined in 26-6-930. Two months ago she had fever, and pains in her body. Then, some red and blue stains appeared, which can still be seen. Normal sensibility. Nasal mucus, negative; cutaneous lesion, negative; Gomes positive (+); After K.I., negative.

Diagnosis: Polymorphic erythema.

These cases are too few to permit definitive conclusions, but they deserve further study.