

# Immunoglobulin patterns in foeto-placental insufficiency

by

G. BRIGATO\* and G. PISANO\*

Foeto-placental insufficiency has become a separate clinical entity in modern obstetrics. The term has reference to high-risk pregnancies, in which the diagnostic problem must be solved before therapy is undertaken, since various forms of foeto-placental insufficiency exist.

We can in fact distinguish between a primary and a secondary form, which may be either acute or chronic. There are not usually any therapeutic problems with the acute condition, which systematically progresses towards abortion or premature delivery. The chronic form, which is slower to develop, must be differentiated as between primary and secondary insufficiency. It is often found, though it is frequently unobserved, that serious anaemia involves secondary foeto-placental insufficiency, the placental factor being the greater, as in the most serious forms of toxæmia of pregnancy, materno-foetal iso-immunization and biologically protracted pregnancy. In these cases the laboratory findings are almost negative and therapy must be oriented towards the basic illness; in other words we cure the anaemia, we cure the toxicosis, we prevent it being protracted and we combat the foeto-placental insufficiency. Thus it is not a question of solving therapeutic problems but rather of setting up a diagnostic programme in good time, thus avoiding, by abstaining from treatment, the production of irreversible lesions.

Primary foeto-placental insufficiency is the true form of this condition. The aetiological and pathogenetic factor can often be avoided if we remember that we are dealing with dysfunction of the functional unit of the foetus and the placenta.

## MATERIAL AND METHODS

We have utilized various parameters with a view to diagnosing pregnancy involving foeto-placental insufficiency. Many of these parameters, such as glycaemia, the electrolytes, proteinaemia, uricosuria, uricaemia, vaginal and hormonal cytology, have given us very little help. Much more useful results, however, have been obtained from determinations of plasma urea (even with very low readings), from study of the amniotic fluid (spectrophotometric curve - creatinine level - cell population), and from Lauritzen's test, which is negative in secondary forms of foeto-placental insufficiency. Specifically in the primary forms, we found that the immunoglobulins we studied had a special behaviour pattern, which was the expression of diminished maternal immunological tolerance as compared to the paternal component of the foetal structures.

Our study was limited to three classes of immunoglobulins that can be of great importance, IgG, IgA, IgM. The technique used for the determinations was that of simple radial immunodiffusion by Mancini's method.

---

\* From the Department of Obstetrics and Gynaecology Hospital of Este (Italy).

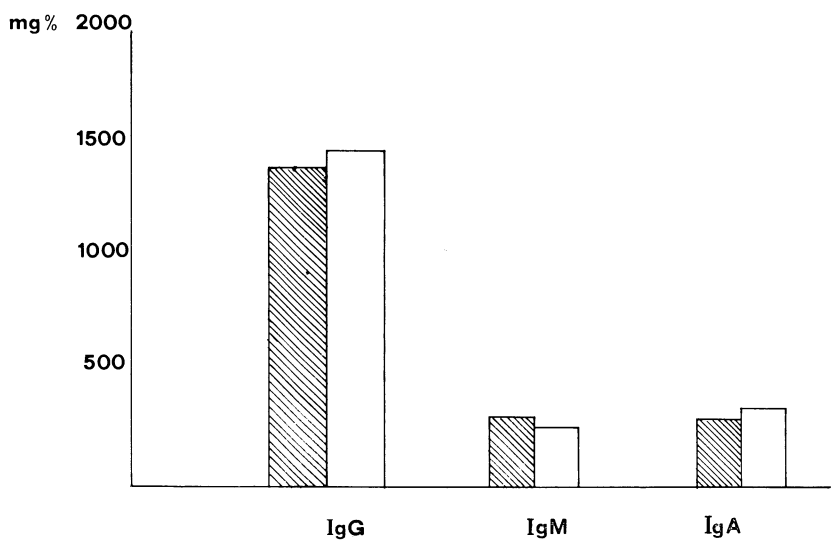


FIG. 1.

▨ NORMAL PREGNANCIES (mean values)  
□ FOETO-PLACENTAL INSUFFICIENCY (mean values)

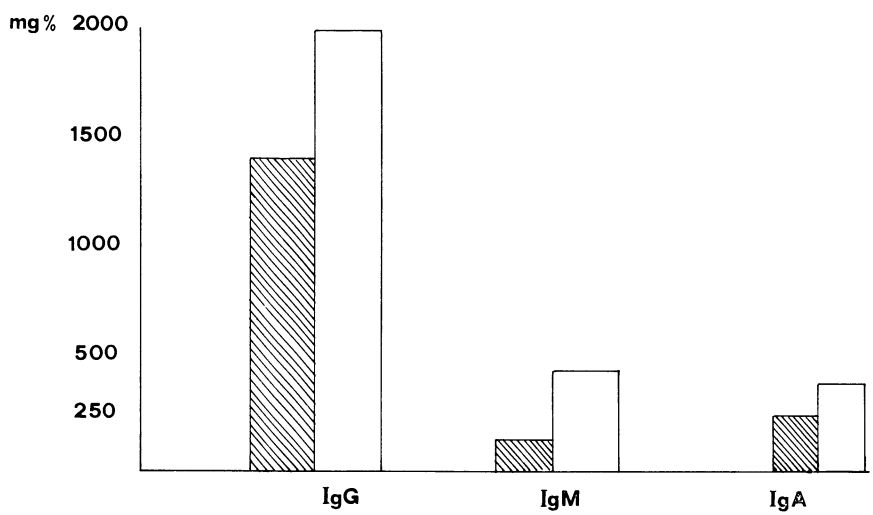


FIG. 2.

▨ NORMAL PREGNANCIES (after therapy)  
□ FOETO-PLACENTAL INSUFFICIENCY (after therapy)

## RESULTS

The results obtained lead to the following considerations:

1. All the immunoglobulin fractions increase during pregnancy, in primary foeto-placental insufficiency; the most significant increase was that of the IgG, which was much above the values found in normal pregnancies (and these values in their turn are greater than in non-pregnant subjects) (Fig. 1);

2. Increases were recorded even in IgM and IgA levels, though to a much lesser extent;

3. The increases seemed to be proportional to the nature of the foeto-placental dysfunction (the greater the degree of insufficiency, the higher the level of immunoglobulin);

4. The mean values reached by the IgG immunoglobulin were around 3000 mg%, by the IgA, 400 mg% and by the IgM, 300 mg%;

5. Drug therapy (with vasodilators, and with a view to stimulating tissue oxygenation: xanthenol nicotinate and taurine) brought about a diminution in values of the immunoglobulins, which tended to return to normal after 30 days of treatment (Fig. 2);

6. The immunoglobulin pattern remained unchanged even if irreversible placental lesions occurred.

## SUMMARY

After drawing a distinction between primary and secondary foeto-placental insufficiency, and between their acute and chronic forms, the authors take into consideration the behaviour of the separate immunoglobulin pattern in the different forms of primary chronic insufficiency. Finally they report on variations after adequate therapy.

# Attachment of *M. hominis* to human spermatozoa

by

F. BUSOLO\*, G. BERTOLONI\*, L. CONVENTI\*, G. A. MELONI\*

In 1973, the observation of T-mycoplasma (*Ureaplasma urealyticum*) cells adhering to spermatozoa of men with reproductive failure emphasized the importance of the relationship between these organisms and infertility (<sup>1</sup>). Epidemiological studies on this subject, carried out before and after these observation (<sup>2,3,4,5,6,7,8</sup>), have not yielded univocal results. While working on the presence of mycoplasmas in the ejaculates and cervical secretions of infertile couples, we obtained some data which seem to suggest for *M. hominis* the same kinds of features previously described for T-mycoplasmas.

## MATERIALS AND METHODS

Ejaculates from 15 men, belonging to infertile couples were examined. The media used for culturing mycoplasma were the same as described by McCormack et al. (<sup>9</sup>)

---

\* From the Institute of Microbiology, University of Padua.