

Rhesus Factor and its Effects on Pregnancy

By

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Rhesus Factor is an antigen which is found in the R.B.C. of 85 per cent of the population. In 1940, Mr. Landstienner, who is known as the father of blood grouping, discovered this factor in Rhesus monkeys. He took blood from this species of monkey, injected it in rabbits and prepared an anti-Rhesus serum. When this was tested against the human blood, it was found that 85 per cent. of blood tested, reacted to the anti-Rhesus serum, and the red cells agglutinated. So this 85 per cent., which contained the antigen, is called Rhesus-positive, and the other 15 per cent. is called Rhesus-negative.

Effect on pregnancy: When a Rhesus+ man happens to marry a Rhesus- woman, their off-spring will be either Rhesus+ or Rhesus-. If the off-spring is Rhesus+, the Rhesus- blood of mother will react with the Rhesus+ of the child *in utero*. Normally there is a barrier between the placenta and the uterus to prevent the mixing of the blood between mother and child. Should it happen to mix, an antibody is produced in the mother's blood, which will cause destruction of R.B.C. of the child *in utero*. This may lead to certain diseases of the new born like hydrops foetalis and icterus gravis neonatorum, and, occasionally, a still birth. There is another important fact to know; that it takes more than one mixing of blood in almost all the cases, to produce damage.

There are only two ways in which the blood of one person can mix with that of another—(1) through blood transfusion; (2) from the mother to the foetus in the uterus, through the placenta.

Thus a woman's first baby will not be affected, unless the mother has had a transfusion of Rh+ blood previously. It is clear that a blood

transfusion of Rh+ blood should never be given to a girl or woman without making sure that she is Rh+. While it is not the duty of midwives, this matter should be kept in mind when they are taking the history during the first visit of the mother to the antenatal clinic.

Every mother should have her blood tested for the Rhesus factor during antenatal period, preferably on the first visit; 85 per cent of them will be Rh+ and they will not need further testing. The remaining 15 per cent. need further testing, unless they are primigravida who have never had a transfusion of Rh+ blood. Usually this examination is done again at the 34th week. If there is a history of previous hæmolytic disease, or the antibodies are found to be high in the previous examination, a test should be made in the 32nd week, so that a Caesarian Section or a medical induction may be done to save the child.

Many midwives will probably have seen babies becoming jaundiced after the 1st or 2nd day of birth and seen it deepen gradually; this is due to the destruction of R.B.C. and the accumulation of bilirubin in the blood. This bilirubin should be removed from the blood, otherwise the baby can

develop kernicterus which will lead to deafness and mental retardation later.

The modern treatment for this hæmolytic disease is "exchange blood transfusion". It has become common in most of the big hospitals in our country. The procedure requires that when the baby is born, the cord is left long. When the transfusion is to take place, the cord is cut short and a plastic catheter is passed through the umbilical vein towards the liver. Then the blood is withdrawn with a syringe, usually 10 c.c., and is replaced with the same amount of Rhesus negative blood. Usually 80 c.c. of blood per lb. of body weight is replaced.



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