

### Transcript Details

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## Introduction to Alloimmunization During Pregnancy

### Announcer:

Welcome to ReachMD. This activity, entitled "Introduction to Alloimmunization During Pregnancy" is provided by Omnia Education.

### Dr. Romero:

Welcome to this introduction to alloimmune disorders during pregnancy. I am Roberto Romero, Chief of the Perinatology Research Branch with the Division of Maternal-Fetal Medicine and Obstetrics of the NICHD/NIH, and I am editor in chief for Obstetrics for the American Journal of Obstetrics and Gynecology.

We will begin with a definition of alloimmunization, which is an immune response to non-self antigens from a genetically distinct organism with the same species, which may lead to tissue injury. Alloimmune disorders are important in medicine and responsible for transfusion reactions and also a fraction of transplant rejection. A condition in which 2 individuals who are different makeup coexist is human pregnancy. And therefore, it should not be surprising that the most common circumstance for naturally occurring alloimmunization is pregnancy.

The term alloimmunization in obstetrics generally prompts recollection on erythroblastosis fetalis due to Rh disease, the main cause of hemolytic disease of the fetus and newborn. In addition to red blood cell alloimmune cytopenia, we can have damaged platelets, leading to fetal alloimmune thrombocytopenia, which predisposes to intracranial hemorrhage during fetal and neonatal life. Or the process can affect white blood cells, leading to neutropenia, a condition that predisposes to infection during fetal life or newborn.

Alloimmunization is traditionally recognized to be a cause of damage for these 3 cell lineages. But recent evidence suggests that all the fetal organs can be affected, and these conditions be recognized at the time of birth in the neonatal period. An example is renal disease in which neonates present with renal failure, or proteinuria, due to antibodies present in the mother that affect the kidney. Another example is neonatal hemochromatosis, or liver disease, due to maternal antibodies against the fetal liver. And maternal anti-fetal rejection, in which the target organ for the maternal antibodies is the placenta, is now recognized as a condition observed in cases of fetal death, recurrent fetal death, or spontaneous premature labor and delivery.

This program focuses on alloimmune diseases in pregnancy, and will cover the following subjects: hemolytic disease of the fetus or newborn, and Dr. Ken Moise, a Professor in the Department of Women's Health at the Dell Medical School at the University of Texas, Austin, will be addressing this subject. Then, our role for the modulation of the Fc receptor in the treatment of alloimmune disorders. A frontier on this subject will be covered also by Ken Moise. We will then discuss alloimmune thrombocytopenia in the fetus and newborn. Dr. James Bussel, Professor Emeritus of the Department of Pediatrics at Weill Cornell, will discuss this disorder. Then, alloimmune neutropenia of the fetus and newborn will be presented by Professor de Haas of the Leiden University Medical Center in the Netherlands. I will discuss maternal anti-fetal rejection, and this will be followed by a discussion of the parallels between kidney transplantation and maternal anti-fetal rejection. This subject will be covered by Professor Alexandra Benachi of the Faculty of Medicine in Paris, and Professor Julien Zuber, Professor of Clinical Immunology at the Paris Descartes University in France. Our moderator will be Dr. Lee Shulman, who is a Professor of Obstetrics and Gynecology, and he is in the Division of Clinical Genetics at the Feinberg School of Medicine at Northwestern University. We look forward to the presentations and discussions.

### Announcer:

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