

500 ml. The two-volume exchange transfusion replaces approximately 85% of the neonate's blood.

An exchange transfusion is a sterile surgical procedure. A catheter is inserted into the umbilical vein and threaded into the inferior vena cava. Depending on the infant's weight, 5 to 10 ml of blood is withdrawn within 15 to 20 seconds, and the same volume of donor blood is infused over 60 to 90 seconds. If the blood has been **citrated** (addition of citrate phosphate dextrose adenine to prevent coagulation), calcium gluconate may be given after the infusion of each 100 ml of donor's blood to prevent hypocalcemia.

Prognosis

The severe anemia of isoimmunization may result in stillbirth, shock, congestive heart failure, or pulmonary or cerebral complications, such as cerebral palsy. As a result of early detection and intrauterine treatment, erythroblastotic newborns are seen less often and exchange transfusions for the condition are less common. Despite the availability of effective preventive measures, Rh HDN continues to cause significant fetal morbidity and mortality in the United States.

Nursing Care Management

The initial nursing responsibility is recognizing newborn jaundice. The possibility of hemolytic disease can be anticipated from the prenatal and perinatal history. Prenatal evidence of incompatibility and a positive Coombs test result are cause for increased vigilance for early signs of jaundice in an infant. Data indicate that the use of the hour-specific bilirubin nomogram can be used in infants born at 35 weeks or more with ABO incompatibility and a positive Coombs test result to follow the infant's serum bilirubin to determine the need for additional follow-up after hospital discharge ([Schutzman, Sekhon, and Hundalani, 2010](#)).

If an exchange transfusion is required, the nurse prepares the infant and the family and assists the practitioner with the procedure. The infant receives nothing by mouth (NPO) during the procedure; therefore, a peripheral infusion of dextrose and electrolytes is established. The nurse documents the blood volume exchanged, including the amount of blood withdrawn and infused, the time of each procedure, and the cumulative record of the total