

The Monkey Factor

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Before I was born, my mother tried to kill me. It was not an abortive act on her part. I was not an unwanted pregnancy. In fact I was a fervently wanted and greatly anticipated baby. The reason for my precarious fetal status was because my mother had what she called "the Rh factor." She had blood circulating in her body that could prove to be the demise of her growing progeny in her expanding uterus.

Later in my life, these blood groups that were so mysterious to my parents, were something I would come to know well. However, this was the 1940s. Science and research on blood group antigens and

antibodies was just emerging. In 1901, Karl Landsteiner had first described the ABO blood groups in publications about his research. Karl wondered why two individuals, with identical medical problems, showed different outcomes. One patient would survive a blood transfusion while the second would die. Then he moved on to describe the phenomenon seen when the blood of Rhesus monkeys (hence Rh) was injected into laboratory rabbits. These rabbits produced antibodies to the monkey red cells. Landsteiner decided that the monkey red cells provided the building blocks that stimulated the rabbit's immune systems to build a defense mechanism. These rabbit antibodies attacked the invading monkey red cells.

So what was happening in my mother's Anegative blood stream was that a few red cells from her first pregnancies with my older brothers, had invaded her circulation. Her immune system did not recognize these foreign invaders. Like enemy foot soldiers with bayonets at the ready, these antigens on the invading red cells were signaling her body to use her defensive antibodies to attack and kill these invading warriors. Unfortunately, that also meant killing me, her unborn A-positive baby girl.

Being stubborn was in my nature. I refused to let this battle, started in my host mother's body and carried into my tiny frame, deter me from growing and thriving. Once I emerged from her womb, I was called a "jaundiced" baby. My infant circulation had no choice but to accept those invading antibodies that had crossed the placenta. So they wantonly attacked my healthy red cells. As my red cells were destroyed, my tiny body started to turn yellow. I vomited up the mother's milk I was given because more foreign antibodies were flooding into my stomach. My life hung in the balance for several weeks. I had been born at home in a small Minnesota town. It was the dead of winter. Babies were not taken out to see physicians and visit hospital

emergency rooms. The first trip out of our house was to be baptized at the Catholic Church just down the street. But as the weeks passed and the attacking legions became diluted, I began to thrive.

The next two babies, also brothers, were not so fortunate. Time had enabled the antibodies to increase in number. This would result in quick and painful deaths for both of them—one shortly after birth, and one while still in my mother's womb.

Once I had grown to college age, I decided to pursue a bachelor's degree in laboratory science. As a result, I learned the nitty-gritty details of the killer that had taken my brothers: erythroblastosis fetalis. And I worked in an environment where these babies were saved, using exchange transfusions in which the baby's entire blood supply was "exchanged" for a blood type that would allow it to survive and thrive.

As my career progressed, another treatment was developed, the Rho-Gam injection. It stopped the invading red cell antigens in the mother's body before they ever got through the umbilical cord. I only wish so many babies did not have to die before these amazing life-saving techniques became common medical practice. I continue to recognize and appreciate those early researchers, and the monkeys and rabbits who contributed to saving so many newborn lives.