Red Blood Cell Alloimmunization and Prevalence of Human Blood Groups Among Pregnant Women in Al-Madina Region, Saudi Arabia

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Abstract

Background: Alloimmunization is defined by the development of an immune response following exposure to foreign antigens, which could result in a variety of complications. This study aimed to determine the prevalence of ABO, Rh blood group, and red blood cell alloimmunization alongside its clinical consequences amongst pregnant women in Al-Madina City, Saudi Arabia.

Methods: This retrospective study involves data from pregnant women who attended MCH in Al-Madina City. Data was gathered from 961 women who had an antibody screening (2020-2024) as well as 2555 women who were screened for ABO and Rh blood groups in the year 2023.

Results: The study showed an alloimmunization rate of 10.9%. The rate of antibodies found was the highest with anti-D (50.9%), followed by anti-c (5.7%), and anti-K (4.7%). The most prevailing blood group was O (49%), then A (28.3%), B (18.7%), and lastly AB (4%). Positive Rh cases accounted for 86%, with 13.4% being negative. Complications ranged from mild to severe, such as anemia, hydrops fetalis, and abortion.

Conclusion: Failure to implement antibody screening as part of the routine maternal test would result in missed opportunities to detect these complications sooner and manage them more efficiently.

Keywords

Alloimmunization, Antibody screening, blood groups, pregnant.