

## Article (8)

**Extended Red Blood Cell Phenotyping among Regular Donors in Fayoum, Egypt. Red Blood Cell Inventory Plan .**

### Abstract:

**Background:** Antibodies to clinically significant red cell antigens contribute to haemolytic transfusion reactions and haemolytic disease of foetus and New-born (HDFN). The aim of the study was to estimate the prevalence of extended red cell antigen phenotypes among regular donors in Fayoum, Egypt and to create an emergency model database for chronic transfusion patients. Similar data in Egypt is rare to find in literature. **Methods:** The study was carried out over one year from December 2020 until November 2021 in Fayoum University Hospital Blood Bank. 1834 healthy known blood donor's samples were analysed for major Rh phenotypes (D, C, c, E, e) and for other clinically significant systems including, Kell, Kidd, MNS and Duffy. **Results:** Phenotypic frequencies of Rh system were D+ (84.4%), e+ (79.6%), and C+ (63.9%). The K antigen frequency was (4.3 %), Jka (79.4 %), Jkb (62.37 %), Fy a (33.2 %), Fy b (44.4 %), M antigen was (88%), N antigen (38.6%) The S and s antigens (48.2 %, 85.3% respectively). **Conclusion:** Determination of red cell antigen phenotyping in Fayoum, Egypt, plays an important role in setting a routine phenotyping strategy for multiple transfused patients by keeping donor database for rare phenotypes to prevent haemolytic transfusion reaction.