

A RETROSPECTIVE STUDY OF B19 POSITIVE ANTIGEN BLOOD DONATIONS

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Human parvovirus B19 is a small, spherical, non-enveloped, single- stranded DNA virus. The B19 virion contains two capsid proteins, VP1 and VP2. Because is a non-enveloped virus, the B19 resist in the products treated by dry-heat or solvent detergent .

B19 infects and destroys erythroid progenitor cells of the colony-forming and burst-forming series (CFU-E and BFU-E).

Globoside, a P blood group antigen, is the major red blood cell receptor used by B19 for attachment and entry into the cell. This is why we have included it in our study. Individuals lacking the P blood group Ag are not susceptible to B19 infection and have not circulating antibodies to the virus.

Between August and December 2000 using ID- Parvovirus B19 – DiaMed (haemagglutination in gel technology), we studied 708 blood donations to detect B19 Ag on the plasma kept in our serum collection, we found a prevalence of 0,424 % positive donations. Considering the number of units involved we are continuing this study.

Obtained Results in Blood Donors

Donor	P1 Ag	PV B19 Ag/n. of blo. donations	PV B19 Ab (IgM)*	PV B19 Ab (IgG)*
X	Positive (Pos)	Pos. since 1996 / 9	Neg	Neg
Y	Negative (Neg)	Pos. since 1999/ 4	Neg	Neg
Z	Positive	Pos. since 2000/ 1	Neg	Neg

Obtained Results of Transfused Patients With Blood Components From Those Donors

	P1 Ag	PV B19 Ag	PV B19 Ab (IgM)*	PV B19 Ab (IgG)
Transfused patient with X donor's red cells	Positive	Negative	15 days after transfusion. Positive	15 days after transfusion. Negative
Transfused patient with Z donor's platelets	Positive	Negative	4 months after transfusion. Negative	4 months after transfusion. Negative

* Used test: ELISA – RIDASCREEN – R-Biopharm.

Conclusions:

As it is possible to see in our results, one of the patients was recently infected by one blood unit. Our objective is not to transfuse this positive blood components to patients in risk, like individuals with underlying haemolytic disorders, immunocompromised patients, immunodeficient individuals, pregnant women, fetus and newborns.

Discussion:

1. Should we consider screening blood donations for B19 Ag ?
2. Should we deferral this blood donors ?
3. Should we performe the P blood group antigen in the receptors ?