PREVALENCE OF RED CELL ALLOIMMUNIZATION IN MULTIPLY TRANSFUSED ADULT PATIENTS AT A TERTIARY CARE CANCER HOSPITAL

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BACKGROUND

Repeated red cell transfusion can induce alloantibodies, causing hemolytic reactions and delays in finding compatible blood. Local data in cancer patients are scarce.

OBJECTIVE

To determine the prevalence and specificity of red cell alloantibodies in multiply transfused adult cancer patients and their association with transfusion and clinical factors.

METHODS

- **Design:** single-centre cross-sectional study, Pathology, SKMCH&RC Lahore.
- **Patients:** 100 adults with malignancy and ≥2 red cell units.
- **Outcome:** alloimmunization, a positive antibody screen identified by indirect antiglobulin test.
- **Statistics:** Mann–Whitney U, Fisher and Freeman–Halton exact tests; p < 0.05 significant.

RESULTS

Alloimmunization was detected in 4 of 100 patients (4.0%; 95% CI 1.6–9.8%). Three had multiple antibodies; Rh antibodies predominated and no anti-Kell was found (Table 3). It did not rise with units transfused (Fig 1), and no variable in Table 2 was associated with it.

TABLE 1. CHARACTERISTICS

Variable	*%*
Age 18–30 y	28
Age 31–45 y	36
Age 46–60 y	32
Age >60 y	4
Female	57
Male	43
Solid tumor	68
Hematological	32
2–5 RBC units	41
6–10 RBC units	31
>10 RBC units	28
Exposure <3 mo	19
Exposure 3–6 mo	15
Exposure >6 mo	66
ABO group O	36
ABO group B	33
ABO group A	19
ABO group AB	12
Rh(D) positive	94
Rh(D) negative	5

TABLE 2. CASES (%) BY GROUP

Variable	*Cases %*	*p*
Age group	0/5.6/6.2/0	0.62
Diagnosis	4.4/3.1	1.00
RBC units	7.3/3.2/0	0.46
Exposure	5.3/6.7/3.0	0.42
ABO group	2.8/0/5.3/16.7	0.081
Rh(D)	4.3/0	1.00

Groups in Table 1 order; exact tests.

TABLE 3. ANTIBODIES (n = 4)

Specificity	*No*	*%*
Anti-E (Rh)	3	75
Anti-c (Rh)	2	50
Anti-Cw (Rh)	1	25
Anti-Jkb (Kidd)	1	25
Not identified	1	25

FIG 1. BY UNITS TRANSFUSED

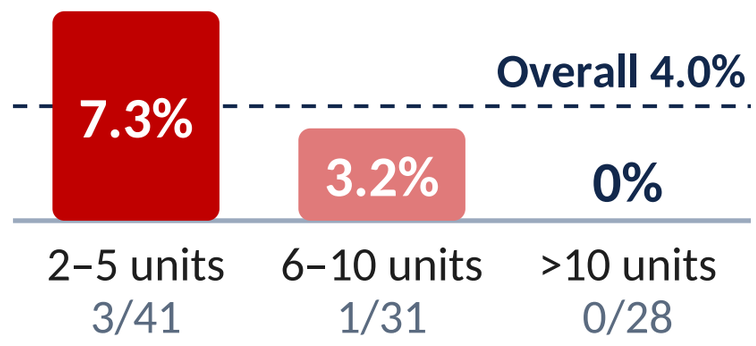
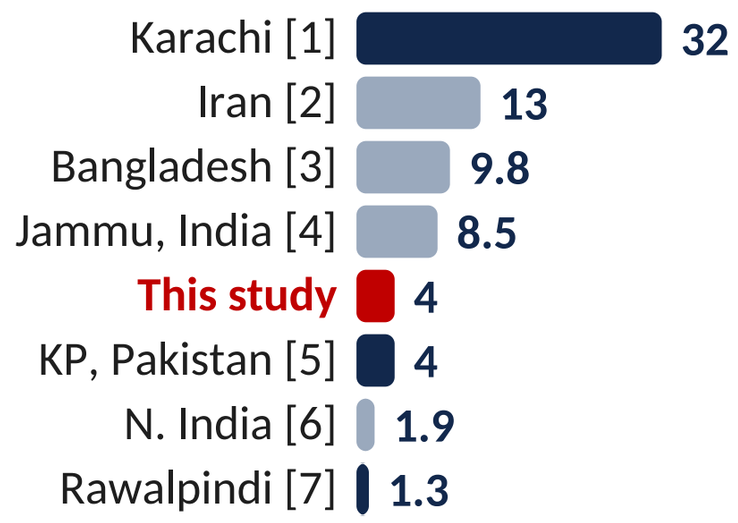


FIG 2. VS ASIAN DATA (%)



Cohorts: Karachi breast cancer; North India hem-onc; Rawalpindi women; rest thalassemia.

CONCLUSIONS AND LIMITATIONS

Conclusions

- About 1 in 25 patients (4.0%) was alloimmunized.
- Rh antibodies (anti-E, anti-c) predominated; no significant rise with units transfused.
- Findings support considering routine antibody screening; Rh matching merits study.

Limitations

- Single-centre study.
- Small sample (100 patients).
- Only 4 cases: wide intervals.
- Cross-sectional: timing of antibody formation unknown.

REFERENCES (FIG 2)

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Values as reported in each study.