CHAPTER-SIX

Conclusion

&

Recommendations

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CONCLUSION

Alloimmunization to erythrocyte antigens is one of the major complications of regular blood transfusions, particularly in patients who are chronically transfused. The factors for alloimmunization are complex.

Most blood banks in Jaipur provide A-B-O and R-h (D) antigens matched blood. Even though blood is A-B-O and R-h compatible, a recipient of a blood transfusion may still develop an alloantibody to one or more of the hundreds of red blood cell antigens that are present in any donors' blood cells.

As is the case in most countries-nationalities; blood-centers using only (A-B-O and R-h) compatibility-tests for blood-transfusion, this implies rise of allo-antibodies frequency-response, In the meanwhile elevating suffering of blood-components receivers in the world that lead to increase of mortality.

Several things-factors might have been participated in the elevation alloi-mmunization rate observed in our search-study, including the heterogeneity of the people living in Jaipur-city, lack of better-matched donators for those receivers and did not use leukodepleted packed-R-B-Cs. Through review of most the previous studies they found & reported of the allo-antibodies frequencies of R-B-Cs so much depending to many factors that involve; first demographics of people, 2nd numeral of blood-transfusions, 3rd multi-pregnancy women, 4th original genetic constitution, 5th immune efficiency, 6th causing disease agent, 7th the time of test and frequency of allo-antibody detection-screening and identification, finally sensibility of the technique process. [76]

The antigenic electronic databases in the blood donors system are little in Rajasthan state-India. On the most blood service centers the A-B-O and R-h D antigens are the majored examined but another investigations are not performed. Moreover, India-country is full of its own specificities and multiple ethnical series that are important to do for the best care of patients that are need packed-R-B-Cs by improving add more lab-tests like phenotyping procedures for any donors' R-B-Cs at least R-h system & Kell antigen, and detection-screening & identifying of allo-antibodies in serum/plasma of patients. This indicates towards a need to study and understand frequencies of a broader spectrum of antigens in the Indian population, besides the

ones currently typed in the commercial cell panels, to determine which additional antibodies may need identification.[75]

Since in 50% of our allo-immunized patients, all the antibodies they formed were against the R-h system. Thus, for protection of allo-immunization event, authors recommended the transfer of R-h antigen & Kell antigen-matched to those receivers whose natural history of illness dictates multi-transfusion requirements in future. In spite of the racial heterogeneity between-any donors' cell and recipients' serum/plasma in Jaipur-city and moderate number of blood-components transfused, there are significant-R-B-Cs immunizations against of the R-B-Cs antigenic particularly in multi-transfusion "patients" with chronic-suffering.

In my-study, we found that RBC-immunization prevalence in Jaipur-city, note that I'm collected the samples from most hospitals in my city (Jaipur-Rajasthan), accordingly many different {case-cases} did not differ from other multi-transfused patients with chronic-suffering in same hospitals, thus extended R-B-Cs-antigen matching-test between-donor and their recipients is deemed to be necessary for all case-cases receiving blood components. Most patients are likely to receive intensive packed R-B-Cs transfusion-medicine leading to an increased hazard of R-B-Cs allo-immunization. Outcomes outputs of some tests (DCT& ICT) indicate the presence of antibodies.

Resolving these complex case-cases usually involves sophisticated immune-hematology methods and translates into heavy workloads, delays in transfusion, increased costs, and sometimes a degree of compatibility below the standard in less intricate case-cases.[34]

This practice is neither safe nor cost-effective, knowing that most patients of the poor class.

The advantages of extended-R-B-Cs phenotyping investigations to reduce allo-immunization have been debated in review-literatures. But cross-matching for R-h and Kell blood grouping systems, earn after performance extensive of R-B-Cs phenotyping process of receivers and their donors, from the once of first packed-R-B-Cs transfused, has been recorded to lead to significant reducing in the allo-immunization incidence rate. Final characteristics of R-B-Cs phenotyping procedures involve identification of the any donors' R-B-Cs antigenic profile among regular duplicate 'any donors' for the facility of availability of proper packed-R-B-Cs for multi-transfused case-cases. [29]

RECOMMENDATIONS

1) The workload imposed on the all blood-centers to avoid doing acute / delayed blood-transfusion re-actions by using international standards (SOP-Standard Operating Procedures) for blood-transfusion safe as American-Association of Blood-Banks and ISO. That all lab-staff must have been trained on all processes to warranty of blood-transfusions by the best safe methods.

2) In addition to; blood-transfusions guideline must be implemented and further studies of phenotypes must be conducted in the Rajasthani people.
3) For example; detection-screening and identification of antibodies policy has to active in all blood-banks and antigen phenotyping policy has to active also.
4) In all blood-banks, we have to do routine tests of pre-transfusion (allo-antibody detection-screening of patient) for already allo-immunized patients to check for the disappearance of old allo-antibodies or development of new allo-antibody and avoid hemolytic transfusion-reaction.
5) Extended phenotype matching technique is costly and will be impossible for all illness, it is important to limit antigen matching to receivers who display to be responders to prevent additional alloantibody formation in the already immunized case.
6) The Medical Council should discuss with the Ministry of Health and explain the seriousness of this problem to the community in terms of health and economic and the need for financial support for these tests so that all patients can do at a price suitable for all poor patients. By this step allo-immunization average and hemolytic/hemolysis-cell of new-born disease case will decrease. Financial support for stem-cell-graft therapy necessary also.
7) Generally we have to do R-B-Cs allo-antibody checking then identification and next issue of antigen negative blood has a significant role in improving blood-transfusion safety. As a rule all blood-centers that have been ‘united’ allo-antibody checking process and identification have warranted safe packed-R-B-Cs multi-transfusion. Moreover; in specific-case-cases must be flagged in electronic databases and information-participates with all blood-centers in Jaipur-city and outside Jaipur-city. That case-cases can be make carry-cards and educative A-B-Out the specified allo-

antibodies' naming. Full R-B-Cs phenotyping of person, illness and their-donors, can be feasibility.

8) Antigen discovery of donor'-R-B-Cs (R-h-Kell antigen) has to do to avoid development allo-antibodies.
9) For protection of allo-immunization, the blood-transfusion of R-h-Kell antigen-matched blood-components to those receivers whose normal history of sickness command multi-transfusion requirements in next time/future.
10) Antibody detection-screening and if required identification, combined with phenotyping blood-bag to provide a supply of antigen-negative blood grouping is needful for safe of packed-R-B-Cs re-transfusion.
11) Try to use leuko-depleted packed-R-B-Cs as much possible.
12) Antigen electronic-databases of any donors'-R-B-Cs have to do for all collected blood-units and registration side by side to blood grouping and pre-transfusion tests on label of blood-bag to avoid products new allo-antibodies in plasma of receivers.
13) Antibodies electronic-databases of any donors'-R-B-Cs have to do for all collected blood-units and registration side by side to blood grouping and pre-transfusion investigations on label of blood-bag to avoid acute/ delayed transfusion-reaction.
14) Hematopoietic-stem {cell-graft} therapy will benefit to avoid using blood-transfusion (at least rich illness).
15) Create an electronic database including (Antigens and antibodies database for plasma/R-B-Cs of donors) all blood-centers in the city.
16) I recommended that regular allo-antibodies detection-screening process of pregnant-women in Yemen or any country having negative-blood grouping and having husband having positive blood grouping.
17) Addition to my information above also recommended to control of allo-antibodies titer every month to manager of immunized pregnant-women case in Yemen or any country.
18) Amran nationality of Yemen recommended has to do allo-Antibodies detection-screening-detection before new pregnancy-women of immunized-case-cases as possible as in Yemen or any country.

Finally:

Create a factory to produce the reagents required locally. Consequently, breaking the global control by some countries in the monopoly of medical products and supplies, including medicines and cosmetics.

My suggestion is to conduct a feasibility study in the establishment of local factories at the lowest cost and the highest quality and offer them to the medical board so that the state support the project as soon as possible, including for the benefit of the middle income and poor patients so that they can do all the necessary tests to combat the formation of allo-antibodies and reduce the mortality rate. In addition to the economic burden that will be provided by the factory solutions.

This study was conducted in the host country, the Indian Republic, Rajasthan state, Jaipur city. The study included all the results of studies in some Indian states and some international countries including all continents.

I hope that my country of origin, the Republic of Yemen, will benefit from a full survey study covering all Yemeni cities and the work of a local factory with government support or by businessmen to combat the formation of allo-antibodies and reduce the mortality rate.

In the last:

Above all, I thank the Almighty Allah, for giving me the inner strength and ability to accomplish this study.