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Autologous Blood Transfusion in Thoracic Surgery: A Survey of 667 Patients

Autologous blood transfusion (ABT) is widely applied, in its different modalities, both to prevent transmission of infectious diseases, transfusion-mediated immunosuppression and to save homologous blood units [1, 2].

Unfortunately, for technical reasons (i.e. difficulties in surgical programming or in reaching local hospital blood centers) or because surgeons or anesthesiologists are reticent to change their transfusion practice, ABT is not always considered to be a way to reduce costs and risks.

Our hospital is an 800-bed facility located in remote alpine valley in Northern Italy, main. Until 1970 it was a sanatorium, now converted into a pluridisciplinary hospital with many surgical and medical divisions. We have included patients in the Thoracic Surgery Division from July 1, 1988 to September 30, 1991. Starting from 1988, an ABT program was applied following current criteria described elsewhere [1] and from 1990, normovolemic perioperative hemodilution (NPH) was incorporated. We analyzed 667 patients who underwent major thoracic surgery. Trauma patients were excluded from this study. Results are illustrated in table 1. Briefly, in this 4-year period, we observed a reduction in both the number of transfused patients and the number of homologous blood units transfused per patient. An increasing percentage of patients (reaching 46.7% in the current year) underwent ABT and/or NPH, associated with a higher percentage of autologous units of the total number of transfused units (from 4.6 in 1989 to actual 34.6). In 1991 62/98 of transfused patients (63.3%) received only ABT and/or NPH. In none of our patients did we observe severe reactions due to phlebotomy [4].

Table 1. Autologous blood transfusion: results in 667 patients

	1988 ¹	1989	1990	1991
Patients, n	100	194	211	152
Transfused, %	63(63)	146(75)	170(80)	98(64)
Homologous units	239	415	348	172
Autologous units	–	19	88	91
ABT patients	–	15	80	71
ABT only	–	9	50	62
ABT all units	–	4.4	20.2	34.6
Blood units per transf. patient (mean)	3.8	3.0	2.6	2.1
Homologous units per transf. patient (mean)	3.8	2.9	2.0	1.1

¹ From July 1, 1988.
² Until September 30, 1991.

We obtained these results by enrolling an increasing number of eligible patients in the ABT program and by continuous education of the surgeons and anesthesiologists in transfusion policy, convincing them to accept for their (stabilized) patients lower hemoglobin values than they used to.

Unfortunately, the majority of our patients were phlebotomized only once before surgery, due to the short preoperative stay in the hospital. In fact, most patients are sent from other facilities, and the distance from main towns makes it difficult to apply a more complete ABT program. However, even one unit collected in the immediate preoperative period seems to reduce postoperative transfusions because of an increase in erythropoiesis [3], as confirmed by our preliminary data of a study in progress.

Our experience shows that even in adverse logistic conditions it is possible to

consistently increase the use of ABT to reduce costs and the use of homologous units.

References

- 1 The National Blood Resource Education Program Expert Panel: The use of autologous blood. *JAMA* 1990;263:414–417.
- 2 Kay L.A., Nobile R.S. Systematic pre-deposit autologous blood provision for elective surgery. An important contribution to hospital blood supply. *Vox Sang* 1990;59:23–25.
- 3 Levine E, Rosen A, Sehgal L, et al. Accelerated erythropoiesis. The hidden benefit of autologous blood donation. *Transfusion* 1990;30:295–297
- 4 McYay PA, Andrews A, Kaplan EB, et al: Donor reaction among autologous donors. *Transfusion* 1990;30:249–252.