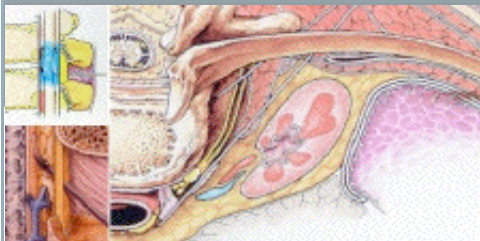


AnesthesiaDotCalm



News You Can Use

Insights Into Clinical Practice

Packed Red Blood Cells (PRBC) are the most frequently used blood product.

Whole blood has been divided into a vast array of components. Anesthesia providers are faced with a cold bag of PRBC which, if given as received, runs into the intravenous line very slowly and can lower the body temperature of the patient.

Most anesthesia providers when giving PRBC usually add normal saline (NS) to the PRBC prior to infusing them through a blood warmer. Of course, in an emergency an external pressure pump is placed around the blood unit, or an infusion machine is used to give the blood more rapidly.

What happens to the chemical content of the PRBC when NS is added prior to infusion? The table shows the difference between nondiluted PRBC and diluted PRBC. Note the low pH in both PRBC and the significant differences in Pco₂, P0₂, Hco₃, and base deficits as compared to arterial blood.

Ref:

Gehrke M, Weenser KA, Walker SC, Shepard JM, Chavez S. Diluted and undiluted characteristics of bank blood[abstract].

Anesthesiology.1999;91:A248.

Diluting Packed Red Blood Cells: A Chemical Analysis

The Difference Between Packed Red Blood Cells (PRBC) and Diluted PRBC		
	Undiluted PRBC	Diluted PRBC with 200cc Normal Saline
No. Units Sampled	75	42
Shelf Age	17.8 days	16.5
pH	6.71	6.75
pCO ₂	120.1	92.5
pO ₂	37.7	35.7
HCO ₃	14.9	12.6
Base Excess	25.0	25.9
HCT	44.5	40.7
Percentage of oxygen saturation	49.8	50.6

