



Hepatitis B screening: Is NAT testing sufficient by itself?

The results of Mary C. Kuhns (Abbott Laboratories, Abbott Park, IL, USA) and coworkers indicate that hepatitis B screening by nucleic acid testing (NAT) might not detect all infected individuals, in particular those that are chronically infected. These results warrant maintaining the current test, which detects a viral antigen in the blood.

Kuhns, M. C., et al. (2004). **Lack of correlation between HBsAg and HBV DNA levels in blood donors who test positive for HBsAg and anti-HBc: implications for future HBV screening policy.** *Transfusion* 44 (09) : 1332-1339.

HIV and HCV screening in organ and tissue donors

Few data have been published regarding the relative contribution of NAT in the safety of organ and tissue donations. The results of Jean-Michel Pawlotsky's team (Hôpital Henri-Mondor, Créteil, France) fully justify the application of NAT, as it allowed to intercept some organ and tissue donors infected by the hepatitis C virus (HCV).

Challine, D., et al. (2004). **HIV and hepatitis C virus RNA in seronegative organ and tissue donors.** *Lancet* 364 (9445) : 1611-1612.

Efficacy of a blood substitute made up of PEGylated hemoglobin

Robert M. Winslow et al. (Sangart, San Diego, CA, USA) have designed a blood substitute composed of human hemoglobin molecules to which polyethylene glycol (PEG) moieties have been chemically coupled. *In vitro* assays and experiments in an animal model suggest that that this substitute is a suitable oxygen carrier having limited side effects.

Winslow, R. M., et al. (2004). **Comparison of PEG-modified albumin and hemoglobin in extreme hemodilution in the rat.** *J Appl Physiol* 97 (10) : 1527-1534.

Laboratory production of human red blood cells

Earlier this year, Luc Douay and coworkers (Hôpital Armand-Trousseau, Assistance Publique Hôpitaux de Paris, France) have published impressive results on the *in vitro* amplification of human hematopoietic stem cells and their differentiation into mature red blood cells, with a yield approaching 100%.

Giarratana, M. C., et al. (2005). **Ex vivo generation of fully mature human red blood cells from hematopoietic stem cells.** *Nat Biotechnol* 23 (01) : 69-74.

Is transfusion beneficial to cardiac patients?

The results of Sunil V. Rao (Duke Clinical Research Institute, Durham, NC, USA) et al. suggest that a rather conservative approach restricting red blood cell transfusion leads to better outcomes in patients hospitalized for acute cardiac problems. Such a recommendation is particularly relevant to patients in otherwise stable condition and whose anemia is mild to moderate.

Rao, S. V., et al. (2004). **Relationship of blood transfusion and clinical outcomes in patients with acute coronary syndromes.** *JAMA* 292 (13) : 1555-1562.

Cord blood transplantation in adult leukemia patients

Two articles, published by teams led respectively by Mary M. Horowitz (Medical College of Wisconsin, Milwaukee, WI, USA) and Éliane Gluckman (Hôpital Saint-Louis, Paris, France), suggest that cord blood transplantation performed in adult leukemia patients is generally as successful as bone marrow transplantation.

Laughlin, M. J., et al. (2004). **Outcomes after transplantation of cord blood or bone marrow from unrelated donors in adults with leukemia.** *N Engl J Med* 351 (22) : 2265-2275.

Rocha, V., et al., for the Acute Leukemia Working Party of the European Blood and Marrow Transplant Group and the Eurocord-Netcord Registry. (2004). **Transplants of umbilical-cord blood or bone marrow from unrelated donors in adults with acute leukemia.** *N Engl J Med* 351 (22) : 2276-2285.