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A Monthly Newsletter Summarizing Important Advances in Transfusion

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Erythroblastopenic Aplastic Anemia Associated with Recombinant EPO Treatment

For more than 10 years, anemia associated with chronic renal insufficiency has been treated with recombinant erythropoietin (EPO). Casadeva's team from Hôtel-Dieu in Paris found that EPO can induce anti-EPO antibodies in a small proportion of EPO-treated patients. This humoral immune response can lead to erythroblastopenic aplastic anemia in these patients, which from that point on become transfusion-dependent.

Casadevall, N., et al., **Pure Red-Cell Aplasia and Antierythropoietin Antibodies in Patients Treated with Recombinant Erythropoietin**, N Engl J Med 346 (7): 469-475 (2002).

Cloning of Viable Mice from Mature Lymphocyte Nuclei

Therapeutic cloning could lead to *in vitro* production of replacement tissues for treating chronic illnesses such as cardivascular and neurodegenerative diseases. Hochedlinger and Jaenisch, from the Whitehead Institute for Biomedical Research/MIT (Cambridge, MA, USA), provide evidence that it is feasible to reconstitute an entire animal starting from the nucleus of a lymphocyte isolated from an adult mouse. This impressive result demonstrates that nuclei from differentiated cells isolated from adult animals can be reprogrammed to become capable of generating virtually any type of cell found in the body.

Hochedlinger, K., and Jaenisch, R., **Monoclonal Mice Generated by Nuclear Transfer from Mature B and T Donor Cells**, Nature 415 (6875): 1035-1038 (2002) (DOI: 10.1038/nature718).

Catalytic, Factor VIII–Destructing Antibodies in Hemophilia A Patients

More than 25 % of severe hemophilia A patients treated with factor VIII eventually develop inhibitory anti-factor VIII antibodies. This leads to higher factor VIII dosage requirements. A study by Lacroix-Desmazes *et al*. (INSERM Unité 430, Hôpital Broussais, Paris, France) reveals that a significant proportion of these patients have antibodies that not only bind, but can actually cleave and destroy factor VIII. This result provides an explanation for the resistance to treatment and the rapid inactivation of the infused factor VIII observed in these patients.

Lacroix-Desmazes, S., et al., **The Prevalence of Proteolytic Antibodies Against Factor VIII in Hemophilia A**, N Engl J Med 346 (9): 662-667 (2001).

Are Blood Products from Syphilis-Seropositive Donors Infectious ?

A decrease in the prevalence of syphilis among donors, more stringent exclusion criteria, and doubts with respect to the infectivity of blood products from donors who test positive for syphilis, all these factors lead specialists to challenge the rationale for the systematic screening of this disease among donors. The results of Orton *et al*. (American Red Cross Holland Laboratory, Rockville, MD, USA) suggest that the vast majority of donors who test positive for syphilis are actually non-infectious.

Orton, S. L., et al., for the « ARCNET Epidemiology Group », **Prevalence of Circulating *Treponema pallidum* DNA and RNA in Blood Donors with Confirmed-Positive Syphilis Tests**, Transfusion 42 (1): 94-99 (2002).

Detection and Titration of Parvovirus B19 DNA in Plasma and Fractionation Products

Parvovirus B19 causes a usually benign infection in otherwise healthy children. However, it can cause anemic aplastic crises in immunocompromised individuals, and may be lethal to the fetus if the mother becomes infected. Willkommen *et al*. (Paul-Ehrlich-Institut, Langen, Germany) provide evidence that more than half of plasma pools and plasma product lots are contaminated with parvovirus B19. These results could encourage blood products suppliers to wonder about the relevance of implementing a systematic screening of parvovirus B19 among blood donors.

Schmidt, I., et al., **Parvovirus B19 in Plasma Pools and Plasma Derivatives**, Vox Sang 81 (4): 228-235 (2001).