dence of a higher risk of infection due to allogeneic transfusion becomes strong.[10]

Cost-effectiveness analysis is not only a way to discipline the use of new technologies, but is also a way to acquire new medical knowledge. Epoetin for cancer anemia provides an example of both these uses.

Giovanni Barosi, Monia Marchetti

Laboratorio di Informatica Medica, IRCCS Policlinico S. Matteo, Pavia, Italy
E-mail: barosig@smatteo.pv.it

References

1. Beguin Y. A risk-benefit assessment of epoetin in the management of anaemia associated with cancer. Drug Safety 1998; 4:269-82.
2. Glaspy J, Bukowski R, Steinberg D, Taylor C, Tchekmedyian S, Vadhan-Raj S. Impact of therapy with epoetin alfa on clinical outcomes in patients with nonmyeloid malignancies during cancer chemotherapy in community oncology practice. Procrit Study Group. J Clin Oncol 1997; 15:1218-34.
3. Ortega A, Dranitsaris G, Puodziunas AL. What are cancer patients willing to pay for prophylactic epoetin alfa? A cost-benefit analysis. Cancer 1998; 83:2588-96.
4. Barosi G, Marchetti M, Liberato NL. Cost-effectiveness of recombinant human erythropoietin in the prevention of chemotherapy-induced anaemia. Br J Cancer 1998; 78:781-7.
5. Sheffield R, Sullivan SD, Saltiel E, Nishimura L. Cost comparison of recombinant human erythropoietin and blood transfusion in cancer chemotherapy-induced anemia. Ann Pharmacother 1997; 31:15-22.
6. Meadowcroft AM, Gilbert CJ, Maravich-May D, Hayward SL. Cost of managing anemia with and without prophylactic epoetin alfa therapy in breast cancer patients receiving combination chemotherapy. Am J Health Syst Pharm 1998; 55:1898-902.
7. Woronoff-Lemsi MC, Arveux P, Limat S, Morel P, Le Pen C, Cahn JY. Erythropoietin and preoperative autologous blood donation in the prevention of hepatitis C infection: necessity or luxury? Transfusion 1999; 39: 933-7.
8. Carson JL, Altman DG, Duff A, et al. Risk of bacterial infection associated with allogeneic blood transfusion among patients undergoing hip fracture repair. Transfusion 1999; 39:694-700.
9. Sonneneberg FA, Gregory P, Yomtovian R, et al. The cost-effectiveness of autologous transfusion revised: implications of an increased risk of bacterial infection with allogeneic transfusion. Transfusion 1999; 39: 808-17.
10. Marchetti M, Barosi G. Cost-effectiveness of epoetin and autologous blood donation for reducing allogeneic blood transfusions in coronary artery bypass grafting. Transfusion (in press).

Gene therapy for X-linked chronic granulomatous disease

Patients with X-linked chronic granulomatous disease (CGD) associated with a defect in Gp91-phox suffer from a severe disease and exhibit the greatest morbidity and mortality of all CGD patients. In particular, they frequently undergo fungal and bacterial infections, which are mainly localized in subcutaneous tissues and are resistant to treatment. Stem cell transplantation is the only curative therapy available so far.

Gene transfer of Gp91-phox into hematopoietic stem cells and subsequent expression of the gene in mature phagocytes may be an attractive therapeutic alternative. However so far, long term studies have yielded disappointing results, mainly because of low transduction efficiencies.

In this issue, Bellantuono *et al*.[1] examine the possible reasons for low titer amphotropic viral production associated with gene transfer of Gp91-phox into hematopoietic stem cells. These basic studies are crucial for development of therapeutic procedures. A number of studies on gene transfer into hematopoietic stem cells have recently appeared in this journal.[2-5]

References

1. Bellantuono I, Lashford LS, Rafferty JA, Fairbairn LJ. The expression of full length Gp91-Phox protein is associated with reduced amphotropic retroviral production. Haematologica 2000; 85:527-33.
2. Briones J, Puig T, Limon A, Petriz J, Garcia J, Barquinero J. Retroviral gene transfer into human hematopoietic cells: an in vitro kinetic study. Haematologica 1999; 84:483-8.
3. Chischportich C, Bagnis C, Galindo R, Mannoni P. Expression of the nlsLacz gene in dendritic cells derived from retrovirally transduced peripheral blood CD34+ cells. Haematologica 1999; 84:195-203.
4. Bregni M, Di Nicola M, Siena S, et al. Mobilized peripheral blood CD34+ cells express more amphotropic retrovirus receptor than bone marrow CD34+ cells. Haematologica 1998; 83:204-8.
5. Tosi P, Pellacani A, Visani G, Ottaviani E, Tura S. Adenoviral mediated gene transfer can be accomplished in human myeloid cell lines and is inhibited by all-trans retinoic acid-induced differentiation. Haematologica 1997; 82:387-91.