

## Repeated transfusion for sickle cell

Routine blood transfusions for children with sickle cell anemia who are at high risk for stroke should become the standard of care, according to the US National Heart, Lung, and Blood Institute.

The new research shows that administering a blood transfusion once every three or four weeks can cut stroke rates by 90 percent. The results were so compelling that scientists ended the trial, known as STOP, 16 months early and began notifying doctors of the findings. Around 10 percent of the estimated 2,500 children in the US with sickle cell disease are prone to stroke. Once a patient has a stroke, there is an 80 percent chance of recurrence. Transfusions keep the abnormal sickle hemoglobin in the blood at less than 30 percent of the total, lowering the chances of blood vessel blockage in the brain.

No one knows yet for how long the repeat transfusions will be required, but Kornelia Cinkotai of Manchester Royal Infirmary, University Department of Haematology, told *Nature Medicine* that the side effect of iron buildup in the blood after one or two years of continuous transfusion should not be underestimated. "A patient with iron overload may need subcutaneous chelation treatment for up to eight hours a day, every day," warns Cinkotai. UK guidelines recommend bone marrow transplant for sickle cell treatment whenever possible.

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## Commercial interest in cord blood escalates

At a conference marking the 25th Anniversary of the National Sickle Cell Program, Lia Gore from the Children's Hospital, Denver, announced the first successful treatment of a sickle patient with umbilical cord blood (UCB) in North America—and only the fourth worldwide.

Gore transfused an eight-year-old sickle boy with his sister's UCB. "The boy is thriving and back at school," reports Gore. While there are drawbacks associated with what is still an experimental procedure, Gore says that cord blood has overall

advantages compared with bone marrow transplant (BMT). "To get a kid to BMT takes around two months, but we've done that in a week with cord blood, so in life-threatening cases, where you don't have time to wait, this may be the best option."

A limiting factor in UCB transplant is that the volume of blood retrieved—usually between 40 and 110 ml—is only sufficient for use in children. However, Aastrom Biosciences, Ann Arbor, Michigan, recently received FDA approval to begin feasibility studies of UCB in adults as well as children. Aastrom has developed an expansion system that increases UCB progenitor and stem cells to any required volume. Aastrom received a \$460,000 grant from the National Heart, Lung, and Blood Institute last month to

develop this expansion technology.

The increasing commercial interest in UCB has given rise to concern about marketing practices of private companies that advertise the procedure as a medical necessity to prospective parents, based on the fear that their child may succumb to a life-threatening illness.

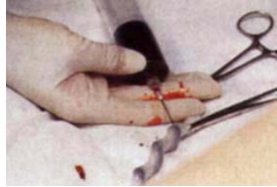
One high-profile private company, the

Cord Blood Registry (CBR), Tuscon, Arizona, charges an initial fee of \$1,000 for UCB removal, treatment and cryopreservation and an annual \$90 storage fee.

Samples are stored until the child reaches 18 years of age, when he or she can decide whether to continue storage payments. CBR currently banks around 8,000 samples. However, the duration for which UCB remains medically viable is not yet known, and if expansion techniques such as that of Aastrom's are not developed, there will be little point in storing samples beyond childhood.

CBR plans to offer clients the option of posting their child's UCB blood type and histocompatibility (HLA) details on the national cord blood registry. But CBR's Stephen Grant estimates that only 30 percent of his customers will sign up because of the ethical dilemma that they may face: deciding whether to give up their child's UCB sample to someone in need.

KAREN BIRMINGHAM



## Italy encourages return of research scientists

A bill introduced into the Italian parliament will, for the first time, allow its universities to directly recruit highly qualified senior Italian scientists working abroad without their having to compete for professorships with other Italian applicants. It is estimated that the new bill, which is expected to become effective with the start of the Italian academic year this month, could be applied to nearly one hundred biomedical scientists.

Nobel Prize winners Rita Levi-Montalcini and Renato Dulbecco, who have both worked much of their lives in the United States, told *Nature Medicine* that it is hoped the long-awaited removal of an "unreasonable" barrier will encourage outstanding Italian researchers to return to their roots. But others are less enthusiastic. Immunologist Giorgio Trinchieri of the Wistar Institute in Philadelphia says, "The grim reality of underfunding in biomedical research is the main reason why I would not be interested in a university post in Italy." Others say that the offer is very attractive, but they are concerned by the potential lack of research equipment and human resources. "Indi-

vidual negotiations with Italian universities for research support are impossible, which makes it difficult to ensure the quality of research," complains cell biologist Pietro De Camilli of Yale University.

Neuroscientist Bernardino Ghetti of Indiana University thinks that the influx of prominent Italian émigré scientists may enrich Italy's academic community, but cautions that "accurate criteria for selection should be worked out to avoid penalizing local scientists." Antonio Lanzavecchia of the Basel Institute for Immunology takes the opposite view: "Prominent Italian researchers from abroad will not be recruited anyway, because local scientific lobbies still prefer personal connections to academic merit."

Most Italian biomedical researchers contacted by *Nature Medicine* stated that they would go back if the entire research system were modeled more closely on international standards. According to Italy's research minister, Luigi Berlinguer, the recent Italian reform efforts are channeled precisely in this direction.

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