



Professor Frank Barry, scientific director, Remedi, and Professor Colin McGuckin, president and director, Cell Therapy Research Institute, Lyon, France MAURA HICKY

The day when Irish parents can use stem cell technology to treat their children's future afflictions is still some way off



THE HARDEST CELL

Professor Colin McGuckin, stem cell adviser to Pope Benedict XVI, gave a slick presentation to the media and assembled politicians at a Dublin city centre hotel last Wednesday. McGuckin was launching the Adult Stem Cell Foundation of Ireland (ASFI), which urged Irish maternity hospitals to allow parents to store stem cells from babies after birth.

After a baby is born and the umbilical cord is cut, some blood remains in the blood vessels of the placenta and the portion of the umbilical cord that remains attached to it. This blood is called placental

Susan Mitchell
Health Correspondent

the country's maternity hospitals to facilitate cord blood banking.

For scientists, stem cells hold huge promise, and the hope is that, in the future, they will be able to use them to conquer incurable diseases and grow new body parts.

For parents, the notion that cord blood could help their children fight diseases at a later time is understandably attractive. The reality, however, is that no such magic elixir exists. At least not yet.

According to the press release issued on behalf of the foundation, some 70 diseases are "treatable with cord blood", and it is currently "treating patients worldwide with leukaemia, heart and liver

disease and sickle cell disease, to name a few".

The claim that some 70 diseases can be treated using cord blood was reiterated by McGuckin during his presentation last Wednesday, and on radio stations later that day.

The Irish Stem Cell Foundation, a pre-existing group that was founded by doctors and researchers in 2009, issued a statement saying that there were only nine diseases that stem cells - of any kind - could be used to treat today. Speaking on behalf of the Foundation, Dr Stephen Sullivan criticised the claim made by the ASFI.

The ASFI followed up with a press release claiming Sullivan was "scientifically incorrect"

What are stem cells?

Experts have likened stem cells to the seeds from which the body's many tissues grow - they are the body's master cells.

Stem cells are extracted from the blood or other substances using standard laboratory methods. Doctors then inject or infuse the concentrated cells back into the patient.

Three types of stem cells have been identified: adult stem cells, human embryonic stem cells and reprogrammed cells. Adult stem cells can be collected from cord blood, bone marrow and body fat. Human embryonic stem cells come from embryos that develop from eggs fertilised in a test tube or another artificial environment.

Susan Mitchell

to get a clear picture of which stem cell therapies were really available today. He expressed concern at the hype that surrounded stem cells in general, when they still had very limited use in clinical practice.

"The companies touting for business are commercial ventures. They are often pushing an open door with parents. We looked at the evidence and came to the view that there was no justification for the widespread harvesting of cord blood. If the evidence changes, we will look at it again," he said.

Senior scientists on the international stage - including Weissman - have also cautioned parents against stem cell banking.

Weissman holds strong beliefs that stem cell transplants will be used to treat more diseases in the future, but he does not advise parents to bank privately because there is no guarantee when - if ever - that future will come.

"It's a business that has very little positive outcome for the people who do it," Weissman said in a recent interview. "And to the extent that they claim cord blood can regenerate anything but blood, they're

wrong. It's a practice of pressuring young people to pay a significant amount of money for private use... I think it's not evidence-based."

During his presentation, McGuckin said Ireland must prepare for the future and that stem cells provided a roadway to personalised medicine. He said Ireland was one of the only countries in Europe that did not have a public umbilical cord bank. This makes cord blood collection more expensive here, as it has to be couriered to Britain for storage, and also hinders participation in promising clinical trials, according to McGuckin.

"Like all countries in Europe, Ireland must look to the future to protect the population and be ready for new treatments. We cannot simply look back and say: 'I wish we had prepared for that.' In my career, I worked with children who would be alive today if more stem cell banks had been available," McGuckin said.

He pointed out that the European Parliament was "tundling" stem cell research, clinical trials and other infrastructure. The parliament would not be doing that if it did not believe it would be of benefit."

The notion that cord blood could help children fight diseases is attractive. The reality is that no such magic elixir exists

and "confusing the public".

This newspaper contacted Remedi, the Galway-based research centre focused on the application of stem cells in treatment to see whether it endorsed the claim that some 70 diseases were treatable with cord blood.

Professor Timothy O'Brien, director of Remedi, said there were "very few" diseases that could be treated clinically using cord blood. He advised this newspaper to contact the International Society for Stem Cell Research (ISSCR) for the most up-to-date information on cord blood.

Under what it calls the "Top Ten Stem Cell Treatment Facts", the US-based ISSCR advises: "The range of diseases where stem cell treatments have been shown to be beneficial in responsibly-conducted clinical trials is still extremely restricted. The best defined and most extensively used is blood stem cell transplantation to treat diseases and conditions of the blood and immune system, or to restore the blood system after treatments for specific cancers."

Interestingly, O'Brien's colleague, Remedi's scientific director, Professor Frank Barry, sits on the board of the new foundation, and joined McGuckin on the podium last Wednesday. However, when interviewed afterwards, Barry balked at claims that some 70

diseases could be treated using stem cells.

"It is more like a handful, really," he said. "It is probably fair to say that up to 70 conditions are being tested right now, but that we don't have the evidence for those yet. We only have the evidence for a handful. They are still experimental. They are not being widely used."

So which is it - 70, or a handful? It was difficult to get a definitive answer to this, but a number of doctors questioned the inclusion of diabetes on the list provided by the ASFI. Consultant haematologist Professor Paul Browne, who heads up the national bone marrow and stem cell programme, said many of the diseases listed were "shades of the same grey". Consultant paediatric haematologist Professor Owen Smith said some of the diseases listed were "incredibly rare". All of the doctors who spoke to this newspaper said the clinical benefits of cord blood treatments were only clear for a tiny proportion of patients with some of the diseases listed.

A number of doctors sit on the board of the ASFI, which is a charitable organisation. So does Michael Doherty, managing director of Medicare Health & Living Ltd.

Medicare, a company based in Co Wicklow, provides the only private umbilical cord stem cell collection service in Ireland. It is licensed by the Irish Medicines Board (IMB) to procure and store cord blood treated in Ireland.

Medicare charges parents €2,780 for the procedure and 20-year storage of the cord blood at a facility in Britain. Medicare's brochures were lyrical about what cord banking can offer, but it fails to inform people of the fact that private cords often have the same genetic disease as the child from whom the cord was obtained, rendering them useless for that child unless the disease genes are corrected by gene therapy.

In a statement, Dr Irving Weissman, director of the world-renowned Institute of Stem Cell Biology and Regenerative Medicine at Stanford University in California, said such marketing from private outfits was "a real problem, as they do not try to tell the whole story".

Dr Sam Coulter-Smith, master at the Rotunda Hospital in Dublin, said it was very difficult for the general public

RISEING STAR

MORE 25-44s THAN 2FM

MORE 25-34s THAN Q102

MORE 15-34s THAN TODAY FM

MORE THAN HALF THE LISTENERS OF 98FM

RADIO **NOVE** 100FM

* JNL/tpos MRII 2011/A, July - December 2011, Dublin Daily

Closing
27th April

The Bespoke

Commodity Bond

Contact Your Financial
Advisor or Bespoke
Investments Limited
on 0818 30 60 90
for further
information.

BESPOKE
Investments Limited