Stamcellen: welke therapeutische toekomst hebben ze ?

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The International Congress “Stem Cells: What Future for Therapy?” in Rome, organized by the Pontifical Academy for Life and by the World Federation of Catholic Medical Associations, is just finished and many subjects have been discussed.

According to what was expected, sessions were extremely interesting and rich of stimuli for the debate which is crossing the media and society. Contrary to what has been spread by propaganda, “The hope to cure with embryonic stem cells such complex diseases as Alzheimer or Parkinson is very scarce”, Prof. Silburn (Australia) stated. In fact, it does not seem possible that diseases which involve most of the brain can be cured with the transplant of only one cellular line. The use of adult stem cells is more promising also for the necessary complex functional connections of the brain, while the big turn – as Prof. Vescovi from Milan stated – could come from the stimulation of the stem cells residing in the brain itself, through adequate growth factors. Vescovi also set forth the hypothesis that genic therapies are possible through the “infection” of stem cells residing in the ependyma with viruses able to correct DNA defects.

During the debate with the participants, Prof. McGuckin from Newcastle University stated that “it is contrary to a correct scientific methodology to turn to research on human embryonic stem cells without first having solved, with studies on animals, the problems they present”. The British scholar underlined the absurd costs of the protocols using human embryonic stem cells, and yet to this day no significant results have been reached, while today there already exist experimental therapies with cells from the umbilical cord for over 70 diseases.

Silburn also mentioned the DNA instability problems of embryonic stem cells, which together with theratogenesis and immune reactions make their use in any clinical condition very problematic.

With reference to the clinical applications of adult stem cells, the talks by MacKay-Sim (Australia) on the therapy of genetic diseases, by Strauer (Germany) on the therapy of cardiac diseases and by Hess (USA) on the therapy of neurological diseases were very interesting. At the horizon, there is the possibility to cure with adult stem cells, intravenously, even widespread diseases such as stroke.

The images that Professor Lima from Portugal presented were especially touching: the motor progress, up to autonomous walking of paraplegic patients due to spinal traumas, cured with adult stem cells of the olfactory mucosa.