

Q&A SESSION WITH VASILIKI E. KALODIMOU



DR. VASILIKI E. KALODIMOU, Director at Flow Cytometry-Research & Regenerative Medicine Department, **IASO Maternity & Research Hospital**

Vasiliki E. Kalodimou is the Director at the Flow Cytometry-Research and Regenerative Medicine Department of IASO Maternity-Pediatric and Research Hospital in Athens, Greece. Since 2006, Dr. Kalodimou has studied and working with stem cells from placenta, umbilical cord and adipose tissue, in every day practice and their applications in regenerative medicine, clinical trials, medical tourism and Flow Cytometry.

In addition to collaboration with state universities and pharmaceutical companies on research projects, Kalodimou frequently publishes her findings, (44 papers and 7 books). She has 2 patents. She is an AABB Lead/Sole assessor, a board member at the AABB Cellular Therapy Accreditation Program Unit for worldwide standards development and accreditation, the Leader (2013-2016) at AABB CT Subsection: CT Product Manufacturing and Testing, voting Committee Member at AABB Cellular Therapies Standards Committee, a Mentor for Cellular Therapy, Professional Engagement Program (PEP). She is also a student mentor for Imperial College University of Medicine in London for the year 2018-2019 and in the advisory panel of Parent's guide to Cord Blood, USA.

What are the important developments in stem cell bioprocessing?

We have hematopoietic stem cells, and everything begins with them. We have the first transplantation, then we have the cord blood banking, which is growing. This is very good for hematopoietic disorders and areas like that. But as we look closer, we can talk about mesenchymal stem cells, including adipose mesenchymal stem cells. For me, this is the future because you could do so many different things with them and cure so many different diseases. We also don't have as many ethical issues using mesenchymal stem cells as they are easily obtained in most cases, especially adipose stem cells. Using them we can actually talk about regenerative medicine which is a global market.

What are the important developments in the discovery and development of stem cells/regenerative medicine?

I think regenerative medicine is the new kid on the block. We have so many different applications that scientists are focusing on including uses in orthopedics, for genetic medicine and myoskeletal disorders, and we think even in cardiovascular disorders. We can use regenerative medicine to try to find a cure and that makes stem cell regenerative medicine a global market right now. I think this is the most important development in the field as many scientists are working to find new treatments for cardiovascular and orthopedic problems. These are hot topic areas as most of the population is suffering from these.

What is the future for the stem cell and regenerative market in 2019?

Regenerative medicine is an emerging branch of medical science. All the scientists working in the field are trying to treat cardiovascular, myoskeletal and orthopedic disorders. Right now we have reached a point where where we can say, "yeah, we see something, we can do something, we

can use this treatment in the future to treat diseases". It's a really huge market across multiple regions; we have a lot of research in North America, in Europe, and in Latin America. However, with this huge market comes medical tourism with people travelling to find new treatments with very low cost and no waiting lists. There are some ethical issues with this though that should be ringing a bell for the scientific community, as we need to have to have our standards.

Keep in mind that until now, the only FDA-approved cellular therapy uses stem cells, in particular cord blood. This is the only therapies that we have license to do. We are focusing on regenerative medicine and we are trying to do more stuff. It's promising, but we need to take a step back, see what's happening and put standards in place because we have many potential issues. China and India are playing a major role in regenerative medicine and are leaders in this field with good accredited hospitals; we can learn from them.

If we talk about numbers, right now the regenerative medicine market is worth \$19.6 billion and we are expecting that in 2020, this will rise to \$67.9 billion. So it's a huge market, we need to be involved, we need scientists, but again, we need standards, we need our quality controls. And we need to make sure that we are going to have a efficient therapies for our patients. So yes, regenerative medicine is our future. But we need to be careful in the way that we apply it.

Finally, it is really worth mentioning that currently we have 1900 clinical trials and this is very promising for people because if therapies get through clinical trials, then we can talk about effective treatments for the world and optimistically, perhaps one day, a disease-free world.