IN THE SPOTLIGHT:  
CMV and Beyond: Challenges and Hopes of a Young European Scientist

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Regardless of antiviral drugs availability, cytomegalovirus (CMV) infection is still a major concern in the management of thoracic heart transplantation. Current line of research in CMV field is intensively focused on the understanding of CMV specific immunity.\(^1\)\(^-\)\(^3\)

At the latest ISHLT meeting in Prague, this topic was covered by the invited talk from Martina Sester\(^4\) during Wednesday’s pre-meeting symposia, and by Evangelia Petrisli (evipetris@yahoo.gr) who presented the abstract entitled, Reconstitution of CMV-Specific Immunity after Heart Transplantation Is Modulated by mTOR Inhibition, but Not by Antiviral Strategy.\(^5\) For this month’s issue which focuses on infectious diseases, I interviewed this young microbiologist who is involved in CMV research at the Clinical Microbiology of the University of Bologna, Italy, to gain more perspective on the research project she presented as well as the current situation of young scientists in southern Europe.

Potena: Evangelia does not sound of Italian origin, though?

Petrisli: Please call me Evi…. Yes, indeed I am from Greece. I was born in Thessaloniki and I moved to Italy in 1997. I then entered the School of Medicine in Bologna, graduating in 2006, followed by four years of Specialization School in Microbiology and Virology linked to Prof. Lazzarotto’s Virology lab. After that I stayed in this lab with a post-doc position.

Have you devoted all these years to CMV?

Yes! Well … mostly but not only. You know, we have two big families of projects involving transplant recipients and pregnant women with primary CMV infection. CMV is not only the leading infection in transplant recipients, but also the leading cause of newborn brain disease in western countries. But our lab is involved also in the diagnostics of other herpes viruses; well, let’s say mostly all viruses except HIV and hepatitis.

Tell us about the research you presented in Prague.

That is a big project we are following with the Cardiovascular Department and has two major goals: investigating the clinical outcome of heart recipients randomized to prophylaxis vs. preemptive approach, and receiving either MMF vs. an mTOR inhibitor, and studying how these therapeutic strategies interact with CMV specific immunity. This project, which is still ongoing, returned very exciting results showing that not only CMV specific immunity
is important in controlling the infection, but also it seems that by using different therapeutic strategies we can modulate CMV immunity. On my side, the big challenge has been represented by the set-up of the ELISPOT technique, which I was able to perform thanks to the technical help of all my colleagues biologists working in the lab, of whom I wish to thank in particular Dr. Angela Chiereghin. This approach, although validated in several studies, is very time consuming, with a very long first step of cell recovery, cell count to standardize the count number in each well, etc.

Thus this technique is still far from the clinical applicability?

Well, partially. On one hand it has been validated and clinically applied. On the other hand, it is a really time consuming technique; the results may be influenced by the operator skills, and you need a lot of blood to harvest a sufficient number of cells to incubate in each well. It provides a good balance between feasibility, cost and sensitivity to monitor CMV immunity. CMV Quantiferon techniques, for example, are much easier technically but currently seem less sensitive. You would need dedicated personnel for ELISPOT only if you wish to use it as a diagnostic tool.

Well, you are talking a lot about science, but besides your specific scientific and technical experiences, tell us a bit more about your personal way of feeling your experience as a scientist: are you happy with it? What are the good sides of a job in research?

Well, since I started the school of medicine, I’ve always dreamt of working in laboratory medicine, hopefully microbiology. And I’ve been lucky to have the chance to enter the specialization school immediately after my MD degree. In this lab I found a huge experience in microbiological diagnostics, thus I had the chance to learn the multiple techniques needed in a big academic hospital to diagnose and monitor infectious diseases.

In addition to this I have been involved in several research projects, initially just as a technician; then, in particular with this CMV immunity project, as an investigator. Thus I learned that research never makes one week equal to the other: you are always challenged with new problems, which you are called to solve, and the solutions are just the gateway for new working hypotheses that open up new challenges. And you can really feel the development of knowledge in your hands. I think that the most positive thing in this way of working is that I could couple routine diagnostics for the patients with the excitement of discovery.

But is “that which glitters all gold”? What about the dark sides?

Well, the gold is what we are currently missing! The dark side of research is that your job stability depends on funding. And funding is now lacking. You know what is happening with this crisis. Research and education have been suffering unbelievable cuts in Italy, and even more in my home country, in Greece. And if a faculty or hospital staff position was difficult to achieve few years ago, nowadays is almost impossible in my field. It is frustrating that a lot of the enthusiasm, good ideas, and development we can generate are impeded by the muddy
ponds of bureaucracy and funding policies. These are strange times; it seems that following your dreams cannot provide you with a vision or at least a hope for the future. You cannot live forever with permanent uncertainties.

Are you regretting your choices? Would you be happier if you were holding a permanent staff position in the diagnostic lab of a small countryside hospital?

This is the “billion euros” question. On one side you have safety and stability, on the other excitement and discoveries. Anyway I am not regretting anything. I am happy to be a clinical microbiologist even though, I must admit, keeping clinical practice could have helped in looking for a stable job. Or even for moonlighting and being a bit more stable financially. I think that my ideal job would have been one that gave me the possibility of wet lab working associated with clinical practice.

Have you ever thought of going back to find a job in Greece?

When I graduated I entered a deep crisis: either going back to get specialty there and live there, or staying in Italy, mostly abandoning hopes to get a future job in Greece. This is how it worked. I chose to stay, and I must admit that “unfortunately” it was the right choice. Now, from one day to another Greeks suddenly woke up in a nightmare. Few years ago this current situation was unpredictable. Now it is really dramatic: no real hope for the future, in particular for young people. Nobody really has the feeling of what is going to happen one week to the other, or even the feeling of what is reality and what is just a media-driven scenario. People are shocked, as if during a war. Talking about choices—what is happening now in my home country, however, proves that once you have to make a choice for your future, there are so many unpredictable variables to take into consideration that any forecast is irrational.

In the end I’ve always followed my dreams and my gut feeling, instinctively throwing myself into a roadmap still to be drawn. It has always been like this in the last 15 years and I must admit that I have been lucky because things always turned out to be as I wanted them. It could have been better, maybe. But it could for sure have been much worse.

And how about moving away from Italy?

Well, my postdoc here is expiring. And I cannot exclude anything now. It would be another new challenge to face!

ELISPOT technique: [http://www.youtube.com/watch?v=TXet7c0mLlA](http://www.youtube.com/watch?v=TXet7c0mLlA)

Economic crisis explained: [http://www.youtube.com/watch?v=N-krRLX8dTg](http://www.youtube.com/watch?v=N-krRLX8dTg)
Greek riots: http://www.youtube.com/watch?v=rshdJZruH_0

Disclosure statement: Luciano Potena and Evangelia Petrisli have no conflicts of interest to disclose regarding this article.

References:


