

**Press Conference: Highlights from Late Breaker
Abstracts - Part I
XVI International AIDS Conference
August 17, 2006**

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MARK WAINBERG, PH.D.: Translate that into English I think it means, since I'm a bit of a basic scientist myself, that if you have monkeys that get infected with this terribly virulent strain, this immunodeficiency virus and they control their viremia that relates to the fact that they have done an excellent job at maintaining a subset of CD4 cells that have the ability to recognize certain SIV antigens of relevance. But I'll leave it to Agneta to fill you in on the details.

AGNETA VON GEGERFELT: Well I don't know if it's going to be so many more details because I want to be brief. And as you know natural infection of HIV and SIV, they have different disease progression. Some develop AIDS faster than others. So of course the obvious question is what is the difference? And in our lab we have now a monkey model with rhesus macaque that we have infected with SIV. And there we have seen that we have a similar picture. We have animals that control viremia and we have animals that progress to disease. So now we have the opportunity to look into what could be the difference. Of course many here have presented a lot of correlates to disease progression.

What we did is we assumed that the control for the disease is on the immunological basis so we did analysis of T cell substance. And we found that we have central memory

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cells in the animal that controlled viremia, they have preserved central memory cells but they're not just central memory cells, they also respond to SIV specific stimuli. What we now want to do to continue when we have found this correlation, this particular T cell subsets that we would like to make a new study where we want to induce these particular T cell subsets. So when we have induced this subset of T cell we want to challenge animals and to see if that can correlate to control the viremia. And that's it, thank you.

MARK WAINBERG, PH.D.: Questions for Agneta. Yes.

AGNETA VON GEGERFELT: This is we have implied that these could be the same thing in the HIV infected humans. So I don't think these have been analyzed but this is our suggestion.

MARK WAINBERG, PH.D.: [Off mic] work this week in identifying the elite nonprogressors, the elite controllers. Is it possible that this is one of the correlates they should look for?

AGNETA VON GEGERFELT: That probably is one of them. I don't think it's only one. I think there are many.

MARK WAINBERG, PH.D.: What was the route of infection?

AGNETA VON GEGERFELT: In the cause of infection of

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SIV mapped to 51.

MARK WAINBERG, PH.D.: These were females?

AGNETA VON GEGERFELT: Um yes they were females.

MARK WAINBERG, PH.D.: So they were infected
intervaginally?

AGNETA VON GEGERFELT: Right.

MARK WAINBERG, PH.D.: I guess my question is the um
basis upon which many have speculated that an effective
control of SIV or HIV infection might be necessary is through
maintaining a strong mucosal immune response. Can you
comment on whether you think that there is mucosal T cell
immunity operative in your system?

AGNETA VON GEGERFELT: What you're asking me is that
the route is important for the development of immune response
and I believe that. I think it's important. And it's a
different comparative into mucosal or IV challenge. You go
different pathways for the immune responses.

MARK WAINBERG, PH.D.: And do you think that there is
any practical way whereby we might augment the percentages of
cells that can affect a direct antiviral response and
participate in maintenance of control of viremia.

AGNETA VON GEGERFELT: Actually I don't know. I
don't know this.

MARK WAINBERG, PH.D.: What about immunomodulatory

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approaches such as the use of interleukins and interferons?

There are in fact clinical studies that are ongoing in France as an example that use IL2 and IL7 in the hope of specifically elevating?

AGNETA VON GEGERFELT: Yeah.

MARK WAINBERG, PH.D.: Specific populations of t cells.

AGNETA VON GEGERFELT: We have a pilot study where we have used DNA as a vaccine and we have also introduced IO15. And with this procedure we see that we have these particularly central memory cells with SIV specific ad response. So we know we can induce these cells through immunization. It's a matter of to continue, like we will try them to see if it correlate to control of viremia and disease progression.

MARK WAINBERG, PH.D.: So is there anything that you believe might lead us closer as an example to an HIV vaccine based on the work that you've presented here today?

AGNETA VON GEGERFELT: We hope so because this is in the correlate that we have found within this animal because they now, they have antibody in SIV. They have cellular response, we talked about [inaudible] but in terms of correlation between the progressor [misspelled?] and non-progressor, these particular cell population is the only one

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that show a correlation between progressor and non-progressor.

MARK WAINBERG, PH.D.: Okay. Any other questions for Agneta? If not we'll move on to the introduction of Professor of Jean Paul Moatti who is from Marce, [misspelled?] France. He is the presenter Late Breaker Abstract Track E entitled "Time is Costly: Modeling the Macroeconomic Impact of Scaling Up Access to Antiretroviral for HIV/AIDS in Sub-Saharan Africa." Jean Paul [French spoken].

JEAN PAUL MOATTI: Yes, thank you, Mark. This work is supported by the French Agency for AIDS Research. And Mark, as everybody knows is the chair of the scientific board of this agency, so I better be good because he validates us.

Since many years there have been various attempts to try to model the impact of HIV epidemic on macroeconomic growth, of the general growth of the affected countries. But until recently these models were giving quite mixed results. They were basically saying, well they're going to lose one point, the growth would be maybe 4-percent instead of 5-percent so it's significant, but it's not such a big deal.

Quite recently there has been a change in this research in two directions, and the originality of our work is I think is that we do both, which nobody before. The

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first thing is that the previous model we were taking into account only the short-term costs. So the fact that when people are sick because of HIV, you have to spend money to treat them or to take care of them and that they work less, they're not able to work anymore. This is the indirect short-term cost and we have in this conference a lot of evidence that people on RFT makes the workers able to go back to their normal level of productivity very quickly. But for previous models we did not take into account in fact the most important aspects of what we call the long-term indirect cost. The impact of all that on new capital, the fact that inside the family you transmit knowledge and savoir-faire to children, that you increase the education, and these are main factors for economic growth. We know that for a long time and for development. So with techniques, I won't go into details, we are able in our model to better take that into account.

The other thing is that until recently there have been some other presentation in some pre-satellite symposium of that conference. But nobody simulated what would be the counter effects, the positive effects, of scaling up access to treatment and that's what we do. Quickly the results, it deals with simulation in six, based on data, technologic and economy data in six African countries. In two of these

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countries, Angola and [inaudible] a good scaling up program can go as far as totally compensating the negative effects of the epidemic on economic growth. So it can put the economies back on their natural economic track of growth. For three others countries, which are Cameroon, Cote D'Ivoire, and Central Africa Republic, about one-third of the negative impact of the epidemic is compensated on growth thanks to access to treatment. And if we make even more optimistic hypothesis about the decrease in prices of HIV/AIDS medical and service good to take care of people, they maybe able to be as good as [inaudible] and Angola. The bad news but it's not surprise in some cases like Zimbabwe even if you do—and you know the tragic situation of that country from an economic point of view—even if you do a good scaling up program the impact on growth and compensating the effect of the epidemic will not be very significant. So that's the first result.

The second result is that for at least four of these countries, that is with the exception of Zimbabwe and the Central Africa Republic, in 2010 these scaling up programs could become cost beneficial at the macro level. That means that they will give to the economy more added value than they cost. So it's very important. And finally the last message is as the case of Zimbabwe and fortunately and the

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differences also in the country tells us that the time, one of the factors that explains that explains the differences of the country is not only the prevalence of the economic basic trends, but it's also the time when you start the [inaudible]. So I didn't know that time to deliver was the anthem of the conference when we started this work. But it's especially appropriate even for macroeconomic impact of scaling up access to treatment.

MARK WAINBERG, PH.D.: Thank you Jean Paul. Are there questions for Professor Moatti? Yes, wait for the microphone please.

SALLY HOLSTOM: Sally Holstom [misspelled?] from Planet Wire. Did you actually put in to dollar terms sums of some of these kinds of figures that you were doing in your modeling?

JEAN PAUL MOATTI: Yes you have it in the abstract so you can look at it. Of course, to be clear, this is not an evaluation of a real scaling up access program. There is an implicit assumption is that the program are efficiently run and to some extent optimal. We're not saying that it's going to be like this in the real world in 2010, but if we do our work properly that may be the case.

MARK WAINBERG, PH.D.: Jean Paul you alluded to Zimbabwe as a country that is undergoing a transition I guess

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to the worse in terms of its stability and has been for some time. Are you suggesting then that the benefits of providing ARVs rapidly to a country rapidly like Zimbabwe may not have long-term merit? That we should not be providing ARVs to such places? I just want you to clarify because I don't think that's what you meant to say.

JEAN PAUL MOATTI: Well what is unfortunate is that theoretically with this [inaudible] graph models that we are using we can more or less predict what we call an epidemiologic trap, that is a level of the epidemic and its impact on the basics of the economy which is due to the context. So that it really takes the economy in a vicious circle of underdevelopment. By reference to what we call the poverty trap the fact that at some point people who are under skilled and the welfare, well they are taken into a vicious circle. And sometimes even Social Security makes it worse rather than good. Unfortunately it seems that when we did that we thought that we would not find—we hoped not to find any country which will fit with that catastrophic scenario. Unfortunatley in our simulation, and frankly I hope I'm wrong, but Zimbabwe is unfortunately in that situation. So that means at some point, it may be too late. So time to deliver is perfectly important.

MARK WAINBERG, PH.D.: But there are still

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individuals, obviously, in Zimbabwe who can access ARVs and –

JEAN PAUL MOATTI: Of course. Of course.

MARK WAINBERG, PH.D.: And who are doing well as a consequence of getting those ARVs.

JEAN PAUL MOATTI: Yes.

MARK WAINBERG, PH.D.: Yes?

JEAN PAUL MOATTI: What I'm just saying is that the impact of economic growth of that will be a lot limited, but of course that doesn't mean that we should not give antiretroviral treatment to Zimbabwe people, of course.

FEMALE SPEAKER: I still don't get why it doesn't work in Zimbabwe, it's too far gone?

JEAN PAUL MOATTI: Yeah it's a combination of – well three factors are explaining the differences between countries. One is the prevalence, the other is more or less related to AIDS but only directly and marginally that is the basics of the economic dynamic of the country, which is very bad. It would be very bad even in the absence of AIDS, you see. And the third one is the time when you start the antiretroviral treatment, I mean the massive scaling up of antiretroviral treatment. Is it more clear?

MARK WAINBERG, PH.D.: Is there a question back here?

MALE SPEAKER: Thank you. Mr. Moatti what are you assumptions in terms of resources? I mean external resources

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from donors, from international institutions and so on, and proper national resources. What are your assumptions?

JEAN PAUL MOATTI: The way we introduce the scaling up in the model, like in order to work the model, is by making an assumption about the decrease in price of the goods that are necessary to take care of the people. And then because you have elasticity of demand to price, if you lower the price the demand increases. So we don't need to be very specific about that, this decrease in price can come, in practice, from the fact that the price effectively decreases as it has been the case for IRVs [misspelled?] to some extent. And of course international subsidies is a way to decrease price for the government and the [inaudible]. So that's the way it's taken into account. But that's one of the problems I think that we will have to face in terms of macroeconomic constraints is that at least in Africa, today more of half of the AIDS expenditures are coming from outside donors. So it's good because it's international solidarity, but even if you're not very narrow liberal and marketed oriented economist, which is my case, that can create problems at the macroeconomic level. Because it depends when an economy is too much dependent on external aid that creates problems, so yes. Did I answer your question?

MALE SPEAKER: You referred to health spendings?

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JEAN PAUL MOATTI: Yes, health care spending but all types not only IRV.

MALE SPEAKER: Like Liberia?

JEAN PAUL MOATTI: What?

MALE SPEAKER: Like Liberia or countries like that?

JEAN PAUL MOATTI: We did the simulation effect was in the six countries I will say. We didn't do it because we did not have sufficient data on others.

STEVE SMITH: Steve Smith [misspelled?] with *The Boston Globe*, so modeling is great to do. What's the practical implication of this? What's the message?

JEAN PAUL MOATTI: The practical implication is that it's to give to some extent, but I think other people have to do that not me. But I think it gives a lot of micro argument in that conference that it's worth investing in the massive response. And it's very important to do it as soon as possible, that's why we say time is costly. And adding to that to some extent is that also at the macro level, at the level of the global economic policy of a country this is very important. So I think that maybe it could help some friends in this conference to, let's say convince their minister of finance that it's worth doing this kind of thing.

MARK WAINBERG, PH.D.: In other words if I could just give my two cents it is worthwhile for countries in the west

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in ARVs in developing countries for a variety of reasons including the fact that the potential for economic devastation in rural Africa may be so great that we will do our own economies long-term harm but not helping sooner because of the back and fro trade that should be maintained and it is our long-term best interests to keep those regions economically viable. And of course one adds into that the arguments that antiretrovirals in developing countries make sense in the short term because we will do individuals and families so much good as well the public health arguments that lowering viral loads across the board will result in people who get ARVs, less infectious for others. It seems that there are really a lot of good reasons to move forward with scaled up access of antiretrovirals and no reasons whatsoever that any of us can really articulate against doing this on a very expeditious basis.

I think if there are no further questions we'll that the audience that is here for coming and for your kind attention. And we also thank both doctors von Gegerfelt and Moatti for their excellent research that we have now had the opportunity to hear presented. Thank you to both of you.

JEAN PAUL MOATTI: Thank you.

AGNETA VON GEGERFELT: Thanks.

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