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Correcting the AIDS Lies

AIDS dissent is largely based on misunderstanding and misinformation. It is arguably costing lives. This is one attempt to try to collate all relevant facts in one place, so that no-one need die of ignorance.

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Friday, October 06, 2006

More viral load analysis

A recent discussion online made me perform a little back-of-the-envelope math on viral loads. As shown in the recent paper discussed below, on an individual basis the predictive value of viral load on any one individual's rate of CD4 T cell loss is poor. In fact the authors found it responsible for about 4-6% of the variation. But they also supported the original data showing a good correlation between subgroups of viral load and rate of CD4 T cell loss.

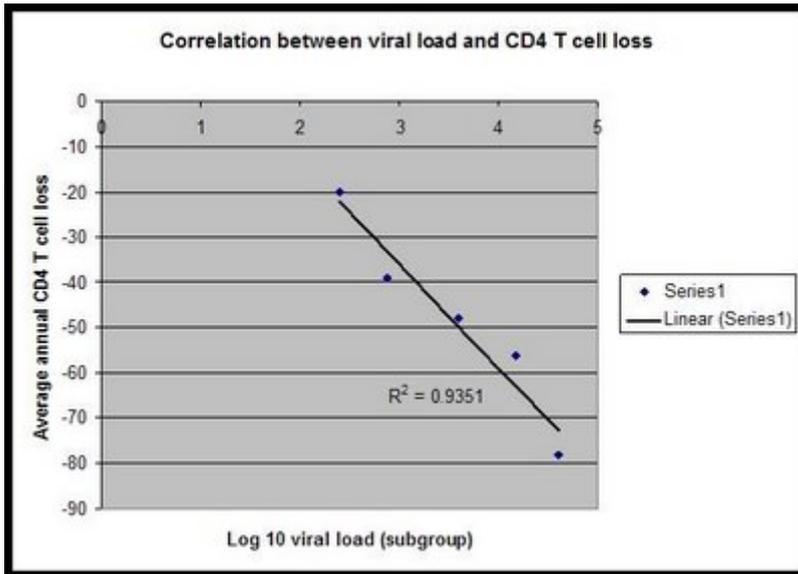
But how good?

Well, I performed the same kind of analysis on the subgroup data.

For those with viral loads under 500 I used a value of 250, for those between 500 and 1000 I took 750, etc. I graphed the log₁₀ value of these viral loads against the average CD4 T cell loss given in the paper for these subgroups.

The result?

A whopping 93.5% link between the subgroup viral load and rate of CD4 T cell loss. Just a tad better than the 4-6% for the individual data points.



The upshot of this? Well, clearly the paper is still saying that at the individual level the predictive value of viral load is very limited - but the SAME ANALYSIS performed on the bigger picture clearly shows why clinicians and scientists the world over concluded that viral load was a good predictor of T cell decline.

It should also but a sock in the mouth of any dissidents who say otherwise.

I'll freely admit that this analysis is far from the comprehensive dataset looked at in the paper by Rodriguez et al, but it IS the same data ;-). Regardless of its limitations, it's pretty striking.

posted by Bennett at [9:29 PM](#) 0 comments

Wednesday, September 27, 2006

[Viral load paradigm shift? Not really.](#)

An interesting study came out recently (I managed to get a copy of the article from one of the authors) on the predictive value of viral load. It's well known (at least among those who bother to read and understand the literature) that those people with higher viral loads tend to progress faster, as was shown by John Mellors back in the mid 1990s using the large Multicenter AIDS cohort study (MACS).

This study took things one step further. They replicated the original findings of Mellors by showing again that viral load roughly predicted how fast AIDS occurred in another large cohort composed of people from 3 separate study sites. For example, in this new paper people with viral loads less than 500 had an average loss of CD4 cells of 20 per year whereas those with viral loads over 40,000 had an average loss of 78 a year (with a smooth change for values inbetween). Basically this data proved that viral load was a reasonable predictor of rate of progression! They compared this analysis with the original MACS cohort and it looks practically identical!

But then they tried to look at the **individual** rate of progression of each member of the cohort. Unsurprisingly they found that the rough-and-ready estimates of progression rate within a subgroup varied from one individual to another. When they ran complex statistical analysis on the effects of viral load on THIS data they found that only about 5-6% of the inter-individual variation can be explained by the initial viral load. In another words, while viral load predicts that you WILL lose CD4 count, and you can give an AVERAGE loss of CD4 cells per year based on that count, you can't say for sure what the ACTUAL loss will be for any one person very accurately.

Well, duh. Nothing amazing there.

Now, what's sad about this whole thing is that it appears as if the dissident websites have jumped all over the mass-media coverage of this without bothering to read the paper. They are assuming that this somehow negates the usefulness of viral load measurements. Ironically if a paper showing that viral load predicted 100% of the CD4 T cell loss (an impossible thing) relied on complex statistical analysis I'm sure they wouldn't accept it with anything like the same level of naivety!

This is nothing new - we've known for years that various other factors can play into AIDS progression, from nutritional status to immune makeup, depression, and viral genetics. We've known for years that overall T cell losses include uninfected as well as infected cells, that immune hyperactivation leads to apoptosis but a lack of renewal - both things that are only indirectly due to HIV infection, but not direct cell killing. What we haven't done before is put a number on anything - to say roughly HOW much influence these things can have on an individual level.

It should also be noted that this should lay to rest any idea that mainstream science is simply laying back and accepting the current paradigm without question. If that were the case, why was this large, comprehensive, complex study performed? Is it because that when dissidents say that scientists ARE sitting back on the current paradigm they are... *gasp*...lying??! And, SHOCK HORROR, this was supported by an NIH grant, the very same NIH that the dissidents are trying to claim is horribly corrupt and under the thumb of pharmaceutical sponsors!

Ahh, is that the sound of cherries being picked?

Anyhow, I will quote from the paper:

"Our findings confirm previous observations that the magnitude of HIV viremia, as defined by broad categories of presenting HIV RNA level, is associated with the rate of CD4 cell loss and extend this observation to patient populations comprising both men and women."

In other words, viral load predicts rate of progression to AIDS.

If the dissidents are trying to twist this paper to say anything else, they are managing a feat of astonishing deception. Is there more to the story? Of course! No-one, except the dissidents, is saying anything else. They also state that "In humans, the predictive value of immune activation level on HIV disease course, independent of plasma HIV RNA

levels, can be demonstrated even when measured during early infection", which goes back to what I said above.

And I refer the reader to my older post on [HIV pathogenesis](#).

It should also be mentioned that viral load isn't used as a clinical criteria for starting treatment unless the load is very high and the CD4 counts are equivocal. Viral load is almost exclusively used for monitoring response to therapy on the individual level, so inter-individual variability isn't an issue anyway.

This result is very important in that it highlights the need to investigate other factors important in triggering or controlling rate of progression to AIDS, but it won't really change the current paradigm in terms of understanding AIDS pathogenesis, nor will it change current treatment guidelines, because neither depends on the idea that HIV viral load is the be-all and end-all of AIDS.

Except of course, that it is in the minds of the dissidents.

Which is (one reason) why they're wrong.

posted by Bennett at [11:18 PM 1 comments](#) _

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