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**Montagnier, T4 cells (acquired immune deficiency)  
and our oxidative theory of "HIV"/AIDS"**

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In 1984 Montagnier and his colleagues published a paper<sup>1</sup> in *Science* where they noted "a qualitative and quantitative defect of the helper-inducer T cell subset (T4<sup>+</sup>) is the major immunological abnormality of this disease [AIDS]... This intriguing phenomenon may be due to virus-induced modulation of the expression of the T3-T4 molecules at the cell membrane, or by steric hindrance of the antibody binding site". In other words, Montagnier did not claim that the decrease in T4 cells was due to their destruction by HIV. In this paper it is obvious Montagnier was fully aware that there is a phenotypic change of T4 cells to T8 and "that T antigens, which seemed to be molecular markers of differentiation, are not markers for terminal differentiation and do not always reflect defined functional properties".<sup>2</sup> Subsequently, this phenomenon has been confirmed by many other researchers. By 1989 there was evidence that the change can be induced by oxidation.<sup>3</sup>

In 1985 Montagnier wrote "This [clinical AID] syndrome occurs in a minority of infected persons, who generally have in common a past of antigenic stimulation and of immune depression before LAV infection".<sup>4</sup> That is, Montagnier recognised that in the AIDS risk groups acquired immune deficiency (AID), low T4 cells, appears before "HIV" infection [LAV≡HIV]. In 1986 Montagnier wrote "...the replication and cytopathic effect of LAV can only be observed in activated T4 cells. Indeed, LAV infection of resting T4 cells does not lead to viral replication or to expression of viral antigen on the cell surface, while stimulation by lectins or antigens of the same cells results in the production of viral particles, antigenic expression and the cytopathic effect".<sup>5</sup>

In the same year Gallo and his associates reported experiments where they prepared T-cell cultures (which contained 34% T4 cells), from normal donors. Cultures were

stimulated with PHA and were (i) "infected" with HIV; (ii) left uninfected. Control cultures remained both unstimulated and uninfected. After 2 days of culture, the proportion of T4 cells in the stimulated-uninfected and stimulated-infected cultures was 28% and 30% respectively, while at 6 days the number was 10% and 3%; the controls not changing significantly. Thus, stimulation is sufficient to cause a decrease in T4 cells and "infection" with HIV makes no significant difference. Furthermore, the quintessential part of this experiment went unreported. That is, data from the "infected" but unstimulated cell cultures. However, they did write "the expression of HTLV-III was always preceded by the initiation of interleukin-2 secretion, both of which occurred only when T-cells were immunologically [PHA] activated. Thus, the immunological stimulation that was required for IL-2 secretion also induced viral expression, which led to cell death".<sup>6</sup>

In AIDS patients the decrease in T4 cells is accompanied by an increase in T8 cells.<sup>7</sup> To account for this phenomena, in 1991 French researchers postulated that HIV preferentially kills the T4 cells by apoptosis.<sup>8</sup> In the same year Montagnier and his associates conducted experiments to prove HIV destroys the T4 cells by apoptosis.<sup>9</sup> Montagnier and his colleagues showed that:

(a) in acutely HIV infected CEM cultures in the presence of mycoplasma removal agent, cell death (apoptosis) is maximum at 6-7 days post infection, "whereas maximal virus production occurred at Days 10-17" – that is, maximum effect precedes maximum cause;  
 (b) in chronically infected CEM cells and the monocytic line, U937, no apoptosis was detected although "These cells produced continuously infectious virus";  
 (c) in CD4 lymphocytes isolated from a normal donor, stimulated with PHA and infected with HIV in the presence of IL-2, apoptosis becomes detectable 3 days post infection and clearly apparent at 4 days. "Intriguingly, on the 5th day" apoptosis "became detectable in uninfected, PHA stimulated cells". Figure 9, where the data are presented, shows approximately the same degree of "apoptotic events" in the PHA cultures at 5 days as in the PHA+HIV cultures on the 4th day "post infection".

They concluded: "These results demonstrate that HIV infection of peripheral blood mononuclear cells leads to apoptosis, a mechanism which might occur also in the absence of infection due to mitogen treatment of these cells...Interestingly, HIV infection of such mitogen stimulated cells resulted in a slight acceleration of the first signs of apoptosis, thus indicating the intrinsic effect of HIV infection".<sup>9</sup>

Their conclusion that HIV has an "intrinsic effect" on apoptosis can be questioned on several grounds. The "slight acceleration of the first signs of apoptosis" in the stimulated HIV infected cultures, as compared to the non-HIV infected stimulated cultures, may not be due to HIV but to the many non-HIV factors present in "HIV" inocula, including:

- (a) *Mycoplasmas* and other infectious agents;
- (b) The many cellular proteins present in the "HIV preparation";<sup>10</sup>
- (c) PHA, present in the cultures from which the "HIV preparation" was derived.

Hence by 1986 Montagnier and Gallo were in agreement that:

1. HIV by itself → no T4 destruction.
2. HIV plus stimulation → T4 cell destruction;
3. Stimulation by itself → T4 cell destruction.

and yet the world has been led to believe that HIV is the factor which kills the T4 cells (acquired immune deficiency) and stimulation (activation) is a co-factor.

In a talk he gave to the European Parliament, 8<sup>th</sup> December 2004, Montagnier said that the cause of the "clinical phase of opportunist infections and cancers which result in death [AIDS]" is principally due to a decline in the numbers of T4 cells. The decline in T4 cells is due to their "propensity to die from apoptosis". In turn apoptosis is due to "potent oxidative stress". Significantly, with the exception of African patients, Montagnier did not address the cause of the oxidation in the AIDS risk groups. In regard to African patients he said that the oxidative stress "exists even in the non-infected individuals because of malnutrition".<sup>11</sup> That is, the cause of AIDS is oxidation, not an infectious retrovirus. Significantly, Montagnier cited none of his own research or that of any other scientist to support his claim.<sup>12</sup>

In a telephone interview Montagnier gave to Adam Smith, Editor-in-Chief of Nobleprize.org,<sup>13</sup> immediately following the announcement of the 2008 Nobel Prize in Physiology or Medicine, Montagnier said "I think there are factors; I've been promoting a virical cofactor for a long time. But I'm beginning now to think those cofactors may act indirectly by inducing mutations – oxidative stress, free radicals which can induce mutations in the virus. What they have shown the virus is the enormous potential to change all the time. This is new, quite new, and was the cause of the epidemic". The oxidative theory of HIV/AIDS is neither new nor Montagnier's. A Medline search (OXIDATION AND (AIDS OR HIV)) shows the first ever published paper on the subject was published in 1988 by Eleni Papadopulos-Eleopulos in *Medical Hypotheses*.<sup>14</sup> This paper is entitled "Reappraisal of AIDS: Is the oxidation induced by the risk factors the primary cause?" The theory that the cause of AIDS is oxidation, induced by specific agents to which the risk groups are exposed, was conceived from the time when AIDS first became apparent. The claim of the discovery of HIV resulted in a broadening of this hypothesis in that it considered oxidation as a principal mechanism in both the development of AIDS and the phenomena which collectively are interpreted as proving the existence of a retrovirus HIV.<sup>12 14-19</sup> Evidence that the oxidation is the underlying mechanism of cellular stimulation/activation was published before the discovery of HIV.<sup>20</sup>

More importantly, in 1991 we personally made Montagnier aware of our oxidative theory of HIV/AIDS by sending him a number of our published papers including "Reappraisal of AIDS: Is the oxidation caused by the risk factors the primary cause?"<sup>14</sup> He responded "Thank you for your letter of October 7<sup>th</sup> and enclosed papers. I will certainly return to you after reading them".<sup>12</sup> He did not return. In 1992, at the initiative of the editorial board of *Research in Immunology*, a Pasteur Institute publication, we published a paper entitled "Oxidative stress, HIV and AIDS".<sup>16</sup> Before publication Montagnier assured the editors he would respond to us as well as to a paper published by Peter Duesberg in the same journal. He did not respond.

Following his talk at the European Parliament, where Montagnier is clearly an apologist for the oxidative theory, in 2006 we directly challenged him in a scientific publication entitled "Would Montagnier please clarify whether HIV or oxidation by the risk factors is the primary cause of AIDS?"<sup>15</sup> Again Montagnier did not respond.

In his book *Virus*, discussing scientists who disagree with the HIV theory of AIDS, Montagnier wrote "Many of my colleagues have already replied, in the most pointed of fashions, to this position. I believe, however, that I too must respond having myself been called into question, but especially because such a theory can lead to irresponsible behavior and may, as with cancer, prompt patients to seek treatment from charlatans and to find a quick death". However, in *Virus*, Montagnier barely responds to Peter Duesberg and Kary Mullis and makes no mention of us. By failing to address our repeated questioning of his work, Montagnier contradicts the view of Nobel Laureate Howard Temin, one of the most eminent retrovirologists. Temin wrote "when an experiment is challenged no matter who it is challenged by, it's your responsibility to check. That is an ironclad rule of science, that when you publish something you are responsible for it...even the most senior professor, if challenged by the lowliest technician or graduate student, is required to treat them seriously and consider their criticisms. It is one of the most *fundamental aspects* of science"<sup>21</sup> (emphasis in original).

In regard to theories that "can lead to irresponsible behavior", Montagnier must know by now that our theory incorporates all the public health measures promoted by the HIV experts, including safe sexual practices, and more.

## **MORE RECENT DATA**

### Immune deficiency precedes HIV infection

Bradford Hill developed "nine viewpoints [that] can bring indisputable evidence for or against a cause and effect hypothesis",<sup>22</sup>. They include strength of association, dose-response relationship, biological plausibility and temporality, that is, the logical necessity for cause to precede effect. Although these criteria have been the subject of some controversy over the years,<sup>23</sup> it is generally accepted that temporality, although not sufficient, is absolutely necessary to prove causation. According to the HIV infection hypothesis of AIDS, acquired immune deficiency (AID = low numbers of T4 cells) follows HIV infection. However, as noted above, in 1985 Montagnier stated that AID precedes HIV infection.<sup>4</sup>

In a prospective study published in 2003, researchers of the Amsterdam Cohort study, analysed "CD4 and CD8 T cell activation marker expression in 102 individuals with known seroconversion data, before and after seroconversion. They concluded "This study demonstrated for the first time that low preseroconversion numbers of CD4 T cells and increased levels of immune activation were associated with an increased risk to develop AIDS after seroconversion...In conclusion, our data show that chronic immune activation and the size of the CD4 T cell pool are critical factors in HIV-1 pathogenesis, even when measured before seroconversion".<sup>24</sup>

In a study of IV drug users in New York it was shown that "The relative risk for seroconversion among subjects with one or more CD4 count <500 cells/uL compared with HIV-negative subjects with all counts >500 cells/uL was 4.53".<sup>25</sup>

A similar study in Italy showed that "low number of T4 cells was the highest risk factor for HIV infection".<sup>26</sup>

Numerous reports from many well known researchers of AIDS in haemophiliacs have shown that T4 cell depletion precedes "HIV infection".<sup>27-30</sup>

The same has been reported in recipients of "Transfusions of Blood-Derived Products".<sup>31</sup>

One of the principal major signs of the Bangui AIDS definition is loss of body weight. However, in a study of Rwandan women, over a 24 months period it was reported that nutritional status assessed by loss of body weight "was a significant predictor of eventual HIV seroconversion...In addition to those findings for measured weight loss during follow-up, reported weight loss before enrolment was also a risk factor for subsequent seroconversion".<sup>32</sup> That is, weight loss preceded HIV seroconversion by many months or even years.

The above evidence from all the main AIDS risk groups shows that, contrary to the HIV infection theory of AIDS, HIV infection follows and does not precede AID. Thus HIV can be its effect but not its cause.

#### Stimulation not HIV is the cause of AIDS

Our prediction at the very beginning of the AIDS era, that stimulation induced by the oxidising agents to which AIDS patients are exposed is the cause of AIDS, as well as the *in vitro* evidence reported by Montagnier and Gallo in the early 1980s (see above), have been confirmed by recent studies.

In 2003 Hazenberg *et al* wrote "In conclusion, our data show that chronic immune activation and the size of the CD4 T cell pool are critical factors in HIV-1 pathogenesis, even when measured before seroconversion".<sup>24</sup>

In a study published in 2007 in the *Journal of Immunology*, the authors concluded that T4 decrease is "neither sufficient nor predictive of disease progression, with levels of immune activation, proliferation and apoptosis being key factors involved in determining progression to AIDS".<sup>33</sup>

#### T4 cells are not markers for immune deficiency

In 1984 both Gallo and Montagnier were aware of Zagury's experimental evidence that "T antigens, which seemed to be molecular markers of differentiation, are not markers for terminal differentiation and do not always reflect defined functional properties". In an editorial in the *Scandinavian Journal of Immunology* in 1988, Göran Möller, from the Department of Immunology, University of Stockholm wrote: "There are three good and

several not so good reasons for questioning the existence of suppressor T cells as a separate T cell subpopulation".<sup>34</sup>

Commenting on Möller's editorial, researchers from the Pasteur Institute wrote: "It follows that the difference between these two cell populations concerns their repertoires and, in consequence, their maturative or activation stages, possibly their differential mechanisms of activation....As discussed here, even primary populations of lymphocytes may follow functional rules *in vitro* that depart substantially from those operating *in vivo*, and cells may look and function differently simply because they are either connected or isolated. In essence, and this is both more interesting and difficult to approach, it seems unavoidable that systems (such as the immune) are more than the sum of isolated clonal activities".<sup>35</sup>

In 2007 Clifford *et al* wrote (i) "...perfect markers of immune deficiency do not exist...We are far from sure that this measure [T4] explains all the effects of HIV on immunological surveillance".<sup>36</sup>

According to Australian HIV experts "CD4 count at AIDS diagnosis might not be an accurate or unbiased measure of immune function at cancer onset".<sup>37</sup>

As has already been mentioned Pandrea *et al*/wrote T4 cell decrease is "neither sufficient nor predictive of disease progression ".<sup>33</sup>

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