

Letters to the Editor

Prevalence of haematological anomalies in asymptomatic HIV infection

The paper by Costello¹ provides interesting data on the haematological perturbations in human immunodeficiency virus (HIV) infection and refers to the results of previous studies.²⁻⁵ The order of appearance of these haematological abnormalities in symptomless HIV seropositive subjects, however, has not been described. To determine this order of appearance and the prevalence of these haematological anomalies during the course of symptomless HIV infection, we initiated a study based on the follow up of asymptomatic HIV seropositive subjects.

Eighty symptomless HIV seropositive (ELISA with confirmation by Western blotting) subjects detected in our centre through systematic screening of blood donations were followed up over 24 months and evaluated five times. Mean age was 31 years (range 20-52). Sixty seven were men. Risk factors were: homosexuality or bisexuality (56 men); drug addiction (eight); blood transfusion (two); and being a heterosexual partner of high risk subjects (10). Four subjects had no classic risk factors. Evaluations included physical examination and laboratory tests—CD4 lymphocyte count, full blood count (haemoglobin, haematocrit, red blood cell count, mean corpuscular volume (MCV), white blood cell count with differential based on blood smear, platelet count), erythrocyte sedimentation rate (ESR). Values of biological variables considered to be pathological in our centre were:

CD4 lymphocytes of $< 400/\text{mm}^3$, haemoglobin concentration of $< 12 \text{ g/dl}$ in men and of 11 dy in women; MCV of $< 80 \text{ u}^3 > 100 \text{ u}^3$; a white cell count of $< 4.0 \times 10^9/\text{l}$ absolute neutrophil count $< 1.6 \times 10^9/\text{l}$, absolute lymphocyte count $< 1.5 \times 10^9/\text{l}$, absolute monocyte count $< 0.2 \times 10^9/\text{l}$; a platelet count of $< 150 \times 10^9/\text{l}$; and an ESR of $> 20 \text{ mm/first hour}$. No subject received treatment during the study. Statistical analysis used Student's *t* test and Wilcoxon's test were applied when appropriate.

With the exception of persistent generalised lymphadenopathy, all subjects were symptomless at the beginning of follow up (stage II or III according to the Centers for Disease Control criteria) and at evaluation 2, 3, and 5. At the end of the follow up and during the following six months, 67 were stages II or III, 13 stage IV. The table gives, for each evaluation, the number of subjects with haematological abnormalities (as defined above) among the 80 subjects followed up over the study period. The MCV was normal in all, except for one woman who presented with an anaemia due to iron deficiency. The thrombocytopenia was always moderate (below $100 \times 10^9/\text{l}$ in only one case). Between the first and the last controls, a significant decrease in red blood cells ($5.1 \pm 0.4 \times 10^{12}/\text{l} - 4.98 \pm 0.42 \times 10^{12}/\text{l}$; $p < 0.001$), haematocrit ($44.8 \pm 3.2 - 42.6 \pm 3.5\%$; $p < 0.001$), haemoglobin ($15.0 \pm 1.4 - 14.7 \pm 1.3 \text{ g/dl}$; $p < 0.05$), white cells ($5.4 \pm 1.5 \times 10^9/\text{l} - 5.0 \pm 1.4 \times 10^9/\text{l}$; $p < 0.01$), absolute CD4 lymphocyte count ($563 \pm 163 - 332 \pm 196/\text{mm}^3$; $p < 0.001$), absolute monocyte count ($0.32 \pm 0.15 \times 10^9/\text{l} - 0.22 \pm 0.13 \times 10^9/\text{l}$; $p < 0.001$), platelet count ($262 \pm 56 \times 10^9/\text{l} - 221 \pm 51 \times 10^9/\text{l}$; $p < 0.001$), and a

significant increase in ESR ($10 \pm 9 - 18 \pm 25 \text{ mm}$; $p < 0.001$) were found in the whole population. No significant modification was found for absolute lymphocyte and neutrophil counts. At the end of the follow up, the prevalence of the decreased CD4 lymphocyte and monocyte counts, and of increased ESR was significantly higher in stage IV patients than in other subjects ($p < 0.01$).

In our series HIV infection did not induce anaemia or modification of MCV: thus the occurrence of macrocytosis and sometimes anaemia in asymptomatic HIV seropositive subjects treated with zidovudine seems to be due entirely to the drug. The incidence of deep thrombocytopenia was weak in our series, but it should be noted that the platelet count significantly decreased with time in the whole of the population. The monocytopenia previously described in AIDS² seems to be an early event in HIV seropositive subjects and can precede the decrease of the CD4 lymphocyte count.

The significant decrease in numbers of red blood cells, CD4 lymphocytes, monocytes, and platelets for the whole of the population reflects an evolutionary process in most HIV seropositive subjects, as does the growing increase of the prevalence of the haematological abnormalities seen during follow up of such subjects.

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Table Percentage of subjects at each evaluation point (1 to 4) from 80 subjects with haematological abnormalities at each control*

	Evaluation points				
	1	2	3	4	5
White cell count $< 4 \times 10^9/\text{l}$	19	16	16	15	20
Neutrophil count $< 1.6 \times 10^9/\text{l}$	4	2.5	2.5	1	10
Lymphocyte count $< 1.5 \times 10^9/\text{l}$	39	45	40	44	45
Monocyte count $< 0.2 \times 10^9/\text{l}$	17.5	11	21	30	51
Platelet count $< 150 \times 10^9/\text{l}$	1	4	2.5	4	5
Haemoglobin (g/dl) $< 12 \text{ g/dl}$ in men, $< 11 \text{ g/dl}$ in women	1	0	0	0	0
ESR at first hour $> 20 \text{ mm}$ at first hour	11	16	16	21	25
CD4 lymphocyte count $< 400/\text{mm}^3$	17.5	32.5	29	41	59
Monocyte count $< 0.2 \times 10^9/\text{l}$					
with normal CD4 lymphocyte count	15	4	10	11	16
CD4 lymphocyte count $< 400/\text{mm}^3$					
with normal monocyte count	16	26	17.5	16	31
Monocyte count $< 0.2 \times 10^9/\text{l}$ and CD4 lymphocyte count $< 400/\text{mm}^3$	2.5	9	10	17.5	31

*First evaluation corresponds to the first documented HIV seropositivity.

References

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