Suid-Afrikaanse Mediese Tydskrif
South African Medical Journal
19 FEBRUARIE/FEBRUARY 1983 DEEL/VOLUME 63 NO. 8

Van die Redaksie/Editorial

AIDS, haemophiliacs and Haitians

More data on the acquired immunodeficiency syndrome (AIDS) keep coming in, but so far have not contributed much to its elucidation. If anything, they are adding to the puzzle of its origin. Two recent reports[1,2] deal with immunological changes in haemophiliacs similar to those in AIDS and indicate that a number of these patients may be at special risk, a finding supported by a report[3] of 3 cases of AIDS identified in heterosexual haemophiliacs. An even more baffling finding is that AIDS is more prevalent in Haitians in the USA; the most recent report[4] gives details of 10 heterosexual male Haitians suffering from the syndrome, which was fatal in 6.

There are 12 000 haemophiliacs in the USA and their lives have been changed by recent advances in treatment. Most are now on home treatment with a lyophilized factor VIII concentrate prepared from pooled plasma and often self-administered. Some, however, are treated with a cryoprecipitate of factor VIII, which has the advantage of coming from a single donor but is far more difficult to supply and to store. The two reports on impairment of cell-mediated immunity in haemophiliacs have both revealed a pattern similar to that in AIDS, with a relative decrease in helper T cells and a relative and absolute increase in suppressor T cells. Both studies, however, showed a higher prevalence of this pattern in patients treated with lyophilized antihaemophilic factor than in those given cryoprecipitate. The magnitude of the impairment of lymphocyte function as demonstrated by the depressed helper/suppressor T-cell ratio, the depressed lymphocytic proliferative response to mitogens (phytohaemagglutinin and concanavalin A), and diminished natural killer activity was not nearly as great as in AIDS,[1] but the data raise some doubts about therapy. (The current situation as regards antihaemophilic therapy in the RSA is elucidated in a letter from Dr J. Gilliland on p. 260 of this issue.)

If the use of cryoprecipitate minimizes a potential risk of AIDS in haemophiliacs, should the present treatment programme be revised? Are the immunological changes recorded due to a blood-borne pathogen? If so, the latter is probably not hepatitis B virus, since in the first report from Cleveland none of the 11 patients who had been receiving lyophilized antihaemophilic factor had demonstrable hepatitis B surface antigen (HBsAg) in the blood, and in the second report from Milwaukee only 1 of 22 patients had a positive test for HBsAg.

The concept of a micro-organism still undetected as the agent of transmission of AIDS is attractive, but how do the Haitians fit in? A study by Vieira *et al.*[4] described 10 cases of AIDS manifesting as opportunistic infection in healthy heterosexual Haitian males. The characteristic changes in populations of helper and suppressor T cells were present, and the picture of *Toxoplasma*, *Cryptococcus*, *Pneumocystis* or *Candida* infection was complicated in 6 cases by a tuberculous infection, which was readily controlled by chemotherapy.

Vieira *et al.* hint that cytomegalovirus (CMV) might have played a part in the immunosuppression, and there have been other reports of CMV infection preceding disseminated Kaposi's sarcoma, another manifestation of AIDS in homosexual men in San Francisco. In this series, reported by Drew *et al.*,[5] all of 9 homosexual men with the sarcoma had antibodies to CMV in the blood, while the virus was recovered from one or more sites in 7 out of 10. Drew *et al.* think that CMV may well be one of the villains in the cast. Let us hope so, since a CMV vaccine cannot be far away.

AIDS has appeared in Haitians from widely separated areas of the USA and there is some unpublished evidence that it also occurs in Haiti. Unfortunately our knowledge of opportunistic infection in Haiti is scanty.

Meanwhile clinical trials of drugs modifying immune responses in the treatment of AIDS are proceeding in New York, Los Angeles and San Francisco,[6] synthetic interferons being used for cases of Kaposi's sarcoma, but results are not available as yet. And there the matter rests for the moment.

1. Lederman MM, Ratnoff OD, Scillian JJ, Jones PK, Schacter B. Impaired cell-mediated immunity in patients with classic hemophilia. *N Engl J Med* 1983; **308:** 79-83.
2. Menitove JE, Aster RH, Casper JT *et al.* T-lymphocyte subpopulations in patients with classic hemophilia treated with cryoprecipitate and lyophilized concentrates. *N Engl J Med* 1983; **308:** 83-86.
3. *Pneumocystis carinii* pneumonia among persons with hemophilia A. *MMWR* 1982; **31:** 365-367.
4. Vieira J, Frank E, Spira TJ, Landesman SH. Acquired immune deficiency in Haitians: opportunistic infections in previously healthy Haitian immigrants. *N Engl J Med* 1983; **308:** 125-129.
5. Drew WL, Conant MA, Miner RC *et al.* Cytomegalovirus and Kaposi's sarcoma in young homosexual men. *Lancet* 1982; **ii:** 125-127.
6. Macek C. Acquired immunodeficiency syndrome cause(s) still elusive. *JAMA* 1982; **248:** 1423-1431.

Coronary artery disease — the truth

Cancer is generally perceived by the layman as an incurable disease, and doctors are understood by the public to be involved in 'treating' or alleviating the suffering of those afflicted with malignant disease. This basic understanding simplifies the task of the physician in explaining the diagnosis and the practicalities of treatment to the patient and his family. The medical and lay press encourage honesty on the part of the physician in gaining the patient's understanding and co-operation in the treatment of any chronic disease.

Unfortunately, neither doctors nor patients seem willing to acknowledge that atherosclerotic coronary artery disease is, in the light of present-day knowledge, incurable. The underlying pathological process — atherosclerotic narrowing of coronary arteries — is poorly understood and no current, easily available treatment has been unequivocally demonstrated to reverse or halt the process.[1] Unfortunately, however, patients see treatment as offering a cure for the disease rather than palliation of the symptoms.

This may be attributed to two factors: firstly, the way that new advances in treatment are presented in the media, and secondly the failure of physicians to explain to their patients the limitations of therapy. Each new advance in therapy is hailed on television and radio and in the press as a major breakthrough; in the past few years coronary artery bypass grafting, ß-blockers, calcium antagonists, streptokinase for acute myocardial infarction, and percutaneous transluminal coronary angioplasty have all been highlighted in the media. Patients and their families perceive these treatment modalities as being curative. None of them is.

There is general agreement that successful revascularization by coronary artery bypass grafting improves life expectancy in patients with serious left mainstem coronary artery disease when compared with medical therapy. There is less certain but highly suggestive evidence that patients with triple-vessel coronary artery disease will also benefit from successful revascularization. However, there appears to be no clear-cut benefit in terms of longevity with surgical rather than medical therapy in patients with stable coronary artery disease who do not fall into the above categories.[2] Most importantly, surgical revascularization is a palliative procedure and does not guarantee immunity from subsequent coronary events. Progression of the underlying disease is unpredictable and follow-up inevitably reveals progression in ungrafted vessels, in the proximal and distal portions of grafted vessels and in the grafts themselves.[3]

Beta-blocking agents have been found to improve life expectancy in survivors of myocardial infarction[4] and they are useful in controlling the symptoms of chronic stable angina. Suggestions that they do anything more in patients with chronic stable angina remain unproved.

The calcium antagonists are effective in relieving angina pectoris when used in adequate doses, but there is no evidence that they are superior, in terms of prolonging survival, to the cheaper nitrates. They may also have some special property which will prolong life in patients with atherosclerotic coronary artery disease. The latter assumption is unproved, however, and at present should not be a consideration in the selection of palliative treatment for a chronic, incurable disease.

The intracoronary administration of streptokinase soon after myocardial infarction effects lysis of the occlusive thrombus but the atherosclerotic plaque remains and most patients are left with significant coronary artery stenosis. The technique may be successful in reducing infarct size when used early after infarction.[5,6] In this country most patients reach specialized centres far too late for thrombolysis to be of use. Patients and their families, having seen dramatic demonstrations of thrombolysis on television, fail to understand why they are being denied the benefit of this form of therapy.

A new therapeutic option, percutaneous transluminal coronary angioplasty, has recently become available. Stringent selection criteria, viz. recent onset of angina, single-vessel disease and anatomical suitability of the lesion, will limit its application to a small number of patients.[7] The long-term sequelae of the 'controlled injury' produced are not clear. In the absence of treatment to halt or limit the progression of the underlying pathological process it is unlikely to be curative.

The natural history of severe symptomatic coronary artery disease is well established. 'Cure' or prolongation of life is possible only in a minority of cases. It is important that physicians, patients and their families understand this, so that treatment and the expected outcome are clear. Efforts to relieve symptoms and prolong life in patients with established coronary artery disease will and should continue. Success in halting or reversing the underlying atherosclerotic process in coronary arteries depends on an understanding of the pathophysiology of the disease. In the interim, greater emphasis should be placed on public health measures aimed at reducing established risk factors which have been demonstrated to be effective.[8]

P. J. Commerford

1. Malinow M. Regression of atherosclerosis in humans: fact or myth? *Circulation* 1981; **64:** 1-3.
2. National Institutes of Health Consensus Development Conference Statement on Coronary Bypass Surgery: scientific and clinical aspects. *Circulation* 1982; **65:** suppl. II, II - 126 - II - 129.
3. Campeau L, Lesperance J, Hermann J, Corbara F, Grondin C, Bourassa M. Loss of improvement of angina between 1 and 7 years after aortocoronary bypass surgery: correlations with changes in vein grafts and in coronary arteries. *Circulation* 1979; **60:** suppl I, I-1 - I-5.
4. Norwegian Multicenter Study Group. Timolol-induced reduction in mortality and reinfarction in patients surviving acute myocardial infarction. *N Engl J Med* 1981; **304:** 801-807.
5. Markis JE, Malagold M, Parker A *et al.* Myocardial salvage after intracoronary thrombolysis with streptokinase in acute myocardial infarction. *N Engl J Med* 1981; **305:** 777-782.
6. Reduto L, Smalling RW, Freund G, Gould K. Intracoronary infusion of streptokinase in patients with acute myocardial infarction: effects of reperfusion on left ventricular performance. *Am J Cardiol* 1981; **48:** 403-408.
7. Kent K, Bentivoglio L, Block P *et al.* Percutaneous transluminal coronary angioplasty: report from the registry of the National Heart, Lung and Blood Institute. *Am J Cardiol* 1982; **49:** 2011-2020.
8. Gordon T, Kannel WB, McGee D, Dowber TR. Death and coronary attacks in men after giving up cigarette smoking. *Lancet* 1974; **ii:** 1345-1348.

Infeksie in die hospitaal

Baie is al oor hospitaal-verworwe infeksie ('nosocomial infection' in die VSA) geskryf en opnames het getoon dat tot 15% van pasiënte 'n infeksie opdoen terwyl hulle gehospitaliseer is. Die relatiewe belang van die verskeie moontlike bronne van infeksie is nog onbekend — veral die rol wat die lewenslose omgewing (lug, water, vloere en ander oppervlakke, meublement en toerusting) en die lewende omgewing (hospitaalpersoneel, ander pasiënte en selfs die geïnfekteerde pasiënt self) as bronne van infeksie speel.

Die algemene opvatting is dat laasgenoemde belangriker is, behalwe miskien vir sommige spesifieke mikroörganismes, soos die waterpokkievirus[1] of die tuberkelbasil.[2] 'n Onlangse studie deur Maki *et al.*[3] beweer weer eens dat mense eerder as voorwerpe die belangrike faktor in die verspreiding van infeksie in die hospitaalomgewing is.

'n Geleentheid vir eksperimentering het hom onlangs voorgedoen toe die Universiteit van Wisconsin-hospitaal uit sy 56 jaar-oue gebou in 'n ruim nuwe gebou met 'n moderne ventilasiesisteem, uitstekende fasiliteite vir die isolasie van geïnfekteerde pasiënte, en enkelkamers vir alle pasiënte (benewens die intensiewe-sorgeenhede) getrek het. Maki *et al.* het aangevoer dat die nuwe hospitaal voor ingebruikneming merkbaar minder besmetting deur algemene nosokomiale patogene as die ou hospitaal sou hê, en dat die eerste paar maande in die nuwe hospitaal gevolglik 'n gulde geleentheid sou bied om die invloed van verlaagde vlakke van omgewingskontaminasie op hospitaal-infeksiesyfers in 'n soortgelyke hospitaal-bevolking te monitor (die personeel en gebruike het onveranderd gebly).

Hulle het toe deppers vir kweking van die gewone areas, insluitend vloere, afvoerpype, krane, ens. asook monsters van die lug en water in die ou en die nuwe hospitaal vóór ingebruikneming sowel as 6-12 maande daarná versamel. Hulle oortuiging dat die nuwe hospitaal voor ingebruikneming minder besmet as die ou een sou wees, was natuurlik geregverdig. Algemene hospitaalpatogene soos enterobakterieë, *Pseudomonas, Staphylococcus aureus, Acinetobacter,* of fungi is uit 17% van die monsters wat in die ou hospitaal geneem is, geïsoleer, maar slegs uit 4,5% van die monsters wat in die nuwe hospitaal voor ingebruikneming versamel is. Soos voorspel kon word, het laasgenoemde vlak na 6-12 maande van gebruik tot 11% gestyg.

Al hierdie bevindings mag baie interessant vir die mikrobioloog wees, maar ongelukkig het dit nie baie betrekking op die kliniese situasie nie. Die voorkoms van hospitaalinfeksies gedurende die laaste 2 maande in die ou hospitaal en die eerste 2 maande in die nuwe een was presies dieselfde — 6,9 infeksies per 100 ontslae. Wat meer is, is dat dit nie merkbaar verander het na byna 'n jaar van ingebruikneming nie. Aangesien groot getalle pasiënte (1 600 - 1 800) 'n gevaar geloop het, sou enige merkbare verandering tog sekerlik bespeur kon word.

'n Verdere bevinding van belang is dat die patroon van hospitaalinfeksies nie verander het nie. Byvoorbeeld, urienweginfeksies het in ongeveer 50% van die hospitaal-verworwe infeksies voorgekom, en chirurgiese wondinfeksies het net van 19% tot 27% gevarieer, 'n statisties onbeduidende verandering. Die algemeenste patogeen was *Escherichia coli,* dan *Candida,* gevolg deur *Pseudomonas, Proteus* en *Klebsiella.* Hierdie mikro-biologiese patroon het baie min verband gehou met die patroon van kontaminasie wat in monsters vanuit die nuwe en die ou gebou gevind is.

Maki *et al.* kom tot die slotsom dat mikroörganismes in die lewenslose hospitaalomgewing — veral op oppervlakke en in die lug, maar ook in water, krane of afvoerpype — min bydra tot infeksies wat endemies in hospitaalpersoneel en -pasiënte voorkom. Dit lyk asof die personeel en pasiënte hulle eie kieme na die nuwe hospitaal saamgebring het. Indien infeksies gereeld in 'n hospitaal voorkom, moet omgewingsmonsters nie slegs dié van die personeel en pasiënte insluit nie, maar moet dit ook van epidemiologiese ondersoeke vergesel wees.

Die resultate bevestig ook die gevolgtrekking van die Committee on Infections within Hospitals in the USA[4] dat roetine-mikrobiologiese ondersoeke van die lewenslose omgewing slegs 'n vermorsing van geld is.

1. Leclair JM, Zaia JA, Levin MJ, Congdon RG, Goldman DA. Airborne transmission of chickenpox in a hospital. *N Eng J Med* 1980; **303:** 450-453.
2. Ehrenkranz NJ, Kicklighter JL. Tuberculosis outbreak in a general hospital: evidence for airborne spread of infection. *Ann Intern Med* 1972; **77:** 377-382.
3. Maki DG, Alvarado CJ, Hassemer CA, Zilz MA. Relation of the inanimate hospital environment to endemic nosocomial infection. *N Engl J Med* 1982; **307:** 1562-1566.
4. American Hospital Association. Statement on microbiologic sampling in the hospital. *Hospitals* 1974; **48:** 125-126.