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Masterclass

Masterclass: HIV-infection and osteopathy☆

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ABSTRACT

Acquired Immunodeficiency Syndrome (AIDS), first recognised in the USA in 1981, and the infective agent responsible, Human Immunodeficiency Virus (HIV), has established itself as a worldwide pandemic in the intervening 27 years. Whilst some education providers have set up services dedicated to caring for patients affected by HIV, it is likely that osteopaths, particularly those situated in urban centres, are increasingly likely to be working with patients and colleagues, or have friends affected by this chronic infectious disease. This masterclass paper aims to summarise the points of interface where HIV-infection affects the neuromusculoskeletal system and may complicate everyday presentations and their clinical management by osteopaths and other manual therapists. Details of the pathophysiology of HIV-infection, drug therapy and medical management of the infection itself are beyond the scope of this paper. Suggested online resources are, however, given where such information can usefully be located.

1. Introduction

Globally, estimates of death due to HIV-infection now stand at more than 25 million adults and children making this one of the most destructive epidemics in recorded history.[1] Access to effective anti-HIV drugs in developed countries has dramatically reduced death rates,[2] however, worldwide it is estimated that in 2007 2.1 million people, including 330,000 children still died of AIDS.[1] In terms of global distribution sub-Saharan Africa bears the brunt of the pandemic with an estimated 23 million people infected. Prevalence of HIV-infection in the general population in South Africa reaches 18.8%, Zimbabwe 20% and Swaziland 33%.[1]

In contrast the regional populations more closely associated with the readership of this journal and osteopathy in general – North America, Europe and Australasia, are affected less, but in a more diverse manner. In all these regions men who have sex with men make up the majority of affected individuals. HIV prevalence in the UK is relatively low and currently stands at 0.2% of the population. Statistics show that at the end of 2007 there were an estimated 77,400 people living with HIV in the UK, of whom approximately 20,700 were unaware of their infection. An estimated 7734 people were newly diagnosed with HIV in the UK in 2007.[3] Although men who have sex with men make up the majority of currently known infections this is unlikely to remain the case as infections acquired through heterosexual sex account for the largest number of new HIV diagnoses in the UK. In 2007, 47% of people diagnosed in the UK were infected through heterosexual sex, making this the single biggest exposure category.[4] Detailed statistics and epidemiology for other regions are documented. [see www.avert.org]

2. HIV-infection and musculoskeletal care – the interface

The increased survival of individuals with HIV-infection in the developed world is a direct result of the availability of increasingly effective antiretroviral drugs – so called Highly Active Antiretroviral Therapy (HAART). With the expanding use of such therapies death rates now stand at less than a fifth of their previous levels[5] and HIV-infection is becoming a chronic, progressive illness with variable outcomes. For some, antiretrovirals have allowed a return to full functioning and health, for others such therapies have converted imminent death to ongoing disability. However, antiretroviral drugs may be limited by the emergence of resistant strains of virus, may not be tolerated or may not be accessed for varying economic, psychosocial or personal reasons.[6] In addition these drug therapies

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involve comorbidities in the form of toxicities and substantial adverse effects. Despite the welcomed increase in survival, therefore, for many, the prevalence of distressing and disabling symptoms remains high.[7,8]

2.1. Pain

The majority of published data on pain and its management in patients with HIV-infection was gathered during the pre-HAART era. Prevalence rates and characterisation of syndromes and aetiologies of pain post-HAART are, however, likely to be very different. In addition, management strategies for pain in a progressive terminal disease such as HIV pre-HAART may now be less appropriate in the more or less stable chronic disease state characterising HIV-infection post-HAART.

Pain prevalence rates in patients with HIV-infection in settings where HAART is freely available range from 42.6% in a sample of gay men completing an online questionnaire (mean CD4 count 459 cells/mL) to 85% in ambulatory patients with intravenous drug use as a risk factor for their HIV-infection (mean CD4 count 340 cells/mL).[7,9–13] In the two studies where incidence of pain was measured the rates were determined to be 67% over the previous four weeks[14] and 88% over two years.[13]

2.2. Site of pain

A study by Martin et al. of HIV-infected outpatients measured both pain prevalence and site of pain.[9] A distinction was made between those who were likely to have contracted HIV through intravenous drug use (IDUs) and those who were non-drug users (non-IDUs) with drug users generally reporting higher pain prevalence (85% vs 71% respectively). Interestingly for those involved in musculoskeletal care, the most prevalent pain sites among the otherwise asymptomatic patients were the head (70% of IDUs and 34% of non-IDUs), the back (36% of IDUs and 31% of non-IDUs), the extremities (42% of IDUs and 25% of non-IDUs) and the joints (30% of IDUs and 20% of non-IDUs). In those patients with increasingly advanced HIV disease the prevalence rates were correspondingly higher. Overall pain prevalence in this study population ranged between 59% in asymptomatic non-IDUs and 100% in IDUs with AIDS. One further post-HAART study was identified which focused on different bodily locations of pain. Holzemer et al. included 249 subjects with advanced HIV disease (average CD4 lymphocyte count 75 cells/mL) who were asked about the location, intensity and quality of any pains they experienced.[15] Prevalence rates for comparable body areas were found to be similar to the study by Martin (head 33.5%, back 29.9%, extremities 29.5%). On questioning subjects about their interventions for pain control Holzemer found that pain medications were used 78% of the time.[15] In addition, although physical therapy interventions such as massage were used infrequently (by 5% of subjects) their use was reported as "extremely effective". The only longitudinal study which measured incidence of pain and defined the site of pain was that of Frich and Borgbjerg.[13] Incidence of pain was measured over a two-year period in patients with AIDS and the reported incidences were 45% for the GI tract, 41% for the extremities, 32% for the head and 20% for muscle or joint pain.

Bernard et al. reported pain prevalence rates for specific bodily locations approximately half of those reported by Martin and Holzemer. These lower prevalence rates may be in part due to the fact that the 249 patients studied were attending an outpatient clinic with less advanced disease (median CD4 218 cells/mL). Actual prevalence rates reported in this study were lower extremities 23%, abdomen 20%, back 16%, headache 14%.[16]

2.3. Types of pain in HIV-infection

Pain, as a symptom, is notoriously difficult to classify according to type, aetiology or syndrome. The majority of studies into HIV-related pain have not attempted to distinguish between disease related and treatment related pain or to classify pain according to type or mechanism. In an ambitious study Hewitt et al. performed clinical interview, neurologic examination and medical records review of 151 ambulatory subjects with HIV-infection reporting pain. In total 405 pains were described by these 151 patients with the average number of pains for each subject being 2.7. The type of pain was classified as somatic in 71% of patients, neuropathic in 29%, visceral in 29% and headache in 46%. An aetiology was ascribed to 65% of the nociceptive somatic pains 32% of which were judged to be due directly to HIV, 5% to be due to HIV therapies and 28% to unrelated causes.[17]

2.4. Other symptoms

Symptoms other than pain common to many chronic disease states are also frequently present in those with HIV-infection. Even for those otherwise asymptomatic individuals with less advanced disease the prevalence of these often vague and distressing symptoms is high. Fatigue or lack of energy has been reported as having prevalence rates of 34–85%,[7,8,12,18,19] nausea 13–48%,[7,8,12,18] paraesthesias in feet and/or hands 20–59%,[7,8,12,18] difficulty sleeping 48–74%,[7,12,18] and shortness of breath 31–62%.[7,12,18] Prevalence rates of fatigue, nausea and paraesthesias in HIV-infected subjects were approximately twice those of HIV-uninfected subjects from the same cohort. These differences were all reported to be statistically significant.[8]

2.5. Physical performance

Pain and other symptoms experienced by people living with HIV-infection may be expected to interfere with their ability to perform specific physical activities and to participate fully in social functions such as work and leisure. Reduced functional capacity may also be important in determining needs for care and support. Information on incapacity in HIV-infection post-HAART comes from a handful of studies using self reports[11,20–22] with one study also requiring subjects to perform a battery of specific tasks.[11]

Crystal et al. in a survey of 2836 subjects at all stages of disease concluded that limitation was more profound in carrying out complex roles such as work, housework and study rather than individual physical tasks.[20] Increasingly troublesome symptoms, more pain and greater fatigue, were unsurprisingly associated with greater limitations in function. Regarding specific tasks, Simmonds et al. subjected 100 patients to a battery of 11 tasks. Those tasks involving motor function, speed, endurance, balance, flexibility and coordination were most impaired. This appears to be the only study which did not rely solely on self report. Overall, physical performance was found to be significantly less than age equivalent historical controls.[11] When using employment rates as a marker of reduced capacity to function socially, even post-HAART, unemployment rates remain high in persons with HIV-infection (60% in the UK).[21]

2.6. Psychosocial correlates

In common with many other life-threatening, progressive illnesses HIV-infection presents individuals with a variety of social, psychological and behavioural challenges. Antiretroviral drug regimens are often complex, require high levels of adherence for success and are often accompanied by significant adverse effects