

UPDATE ON AIDS

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Over the past decade, physicians of all specialties have begun to see and treat HIV-positive patients with increasing frequency. Physicians have had to expand their knowledge of the systemic and localized manifestations of HIV infections. Statistics have been compiled to determine the groups of people affected, as well as the most common signs and symptoms. With the increasing number of patients with HIV infections has come the expanded treatment of HIV related problems by the podiatric physician. Occasionally, the diagnosis may initially be suspected by the podiatric physician and confirmed clinically via laboratory testing. It is, therefore, prudent for the podiatric physician to have the ability to recognize the manifestations of AIDS, and to treat these patients with the professionalism and respect that they deserve.

STATISTICS

AIDS patients continue to be predominantly male between the ages of 25 to 44, with a history of homosexuality, bisexuality, or IV drug abuse. Although, as a percentage of race, there is a much higher incidence of HIV in minority patients, a significantly higher overall number of caucasian patients with HIV exists. Today's clinician must consider that a significant number of HIV-positive patients are women, and that many patients will not fall into the general categories. At this time, female HIV cases are increasing due to contact with bisexual males, coupled with IV drugs and unsafe sexual practices. With these facts in mind, attention can now be directed to the lower extremity manifestations of HIV infections.

CLINICAL SIGNS

HIV-infected patients present with varying signs and symptoms depending on the stage of their disease, as well as certain genetic factors. Certain hallmarks of the disease present, both systemically as well as locally, in the lower extremity. Although it is more practical for the podiatric physician to

concentrate on the local manifestations of HIV infections, one must consider systemic disease processes when examining the patient. The healthy, HIV-positive patient may present as a prospective elective surgical candidate. A thorough history and physical may draw attention to the presence of the virus. The podiatric manifestations of HIV can be divided in two basic categories: neurologic and dermatologic.

Podiatric Neurologic Manifestations

Neurologic manifestations may be classified in two major categories: those that are pharmacologically produced, and those that are nonpharmacologically related. The more difficult category to diagnose and treat is the latter. In the case of nonpharmacologically induced neurologic manifestations, the brain, meninges, spinal cord, peripheral nervous system, and musculature may be affected. HIV patients may present with neurologic symptoms much as a diabetic patient would, with painful peripheral neuropathy. In fact, HIV patients may also present with diminished sensation in a "stocking-glove" distribution. A full neurologic assessment must be performed in all cases of neuropathy. Laboratory testing may be used to exclude certain reversible causes of neuropathy. If no other cause of neuropathy can be found, and the history and physical suggest the possibility for the presence of an HIV infection, the patient should receive an HIV test. Although many patients are initially hesitant to consent to this test, if approached in an appropriate manner, most will agree to have the test.

If the diagnosis of HIV has been documented, the differential diagnosis may be significantly narrowed, realizing that AIDS-related neuropathy is a common sign of the disease. As with all symptoms experienced in HIV-positive patients, neuropathy is related to the stage of the disease. It is very unusual for a recently seroconverted patient to experience neurologic symptoms. As many as 40% of the patients placed into the ARC (Aids Related Complex) or AIDS categories present with neurologic symptoms.

In advanced cases, a motor-related neuropathy may be discovered. If the podiatrist discovers motor involvement or central nervous system effects, a neurologist should be consulted. Encephalopathy, myelopathy of the spinal cord, and degenerative axonal disorders may produce lower extremity manifestations. Central nervous system disorders may present as hyper- or hyporeflexia, a Babinski sign, loss of proprioception and/or vibratory sensation, and a neurologic gait. An AIDS-related dementia occasionally may be detected in patients with HIV infections during consultation. This dementia is known as "AIDS dementia complex" and if present, exists with a concomitant motor defect. It has been proven that HIV can attack neural tissue in the central and peripheral nervous system. Statistics show that up to 80% of HIV patients will have neurologic damage caused by the virus before the time of death. However, not all manifestations become clinically evident prior to death. It has also been demonstrated that in 20% of all HIV-positive patients, neurological signs and symptoms are the first experienced by the patient. A Guillain-Barré-mimicking progressive motor neuropathy is occasionally seen in patients without further neurologic symptoms.

In each case of non-pharmacologically produced neuropathy, treatment most often yields little improvement with current medications such as amitriptyline, mexilit, zotrinx, and corticosteroids. Treatment of CNS infections and excision of tumors will often relieve symptoms. In most cases of painful neurological manifestations, symptoms will resolve over time, possibly due to axonal degeneration or death of the CNS neural connections. In the case of progressive motor neuropathy, further investigation may reveal CNS infection (bacterial, yeast, or fungal), tumors, or degeneration of glial cells. In these cases, complete relief of symptoms may not occur.

Pharmacologically Produced Neuropathy. In reference to neuropathy caused by the use of certain pharmaceutical agents, a great deal of recent literature has been published. The most common medications implicated are d4T (2',3'-dideoxythymidine), ddC (dideoxycytidine), ddI (didanosine), and AZT (zidovudine). Nearly all of the reports studying these medications show that

prolonged administration using higher doses causes painful symmetrical neuropathy in a "stocking-glove" distribution. However, the use of these medications in HIV-positive patients is extremely important in increasing life-expectancy and improving quality of life.

The addition of other pharmaceutical agents to counteract pharmacologically produced painful neuropathy has been unsuccessful to date. The most effective treatment is the discontinuation of the medication in question. Unfortunately, neurologic symptoms are not the only side effects caused by these and other medications necessary for the treatment of HIV. The HIV-positive patient will sometimes have to tolerate significant systemic side effects in the pursuit of a prolonged life-span. When the patient can no longer tolerate the side effects, the medication is usually discontinued and a new pharmaceutical agent is begun. Studies show that within 3 to 4 weeks after discontinuation of the medication, most patients' neurologic symptoms will resolve.

Unfortunately, treatment alternatives in most forms of HIV-related neuropathy are not particularly effective. In some patients, regardless of the underlying cause, no relief of symptoms will be obtained with removal of the causative agent or the addition of other pharmaceuticals. Spontaneous regression of symptoms occurs with loss of axonal fibers and decreased functions of the central nervous system.

Dermatologic Manifestations of HIV

Recognition and treatment of all types of dermatologic diseases occurs on a daily basis in most podiatric practices. Although an HIV-positive patient can present without signs of pedal dermatologic disease, most patients will ultimately develop skin manifestations. When evaluating an HIV patient with a dermatologic problem, several skin diseases are considered. These include psoriasis, onychomycosis, tinea pedis, verruca, Kaposi's sarcoma, and superficial dermal infections.

Onychomycosis/Tinea Pedis. In the clinical setting, most AIDS patients will present with fungal infections of their nails. Onychomycosis can be seen in both the finger and toenails. The infecting agents most commonly implicated are *T. rubrum*,

Candida albicans and *P. ovale*. Tinea pedis may be present in addition to onychomycosis, but this is not the norm. Most commonly, onychomycosis is seen without concomitant tinea pedis. Mycotic nails can predispose to onychocryptosis and secondary bacterial infections. Treatment of mycotic nails may include systemic antibiotic therapy, antifungal medication, or avulsion of the nail. Effective pharmaceutical treatment alone has proven difficult. Another option is palliative treatment. Regular debridement of the nails, with inspection of the digits for secondary skin infection, may prove to be quite effective. Especially difficult to treat are the commonly found verrucae plantaris.

Verrucae. Plantar warts, caused by the human papilloma virus, are found in many patients with AIDS. As in the treatment of mycotic nails, verrucae seem to be ultra-resistant, with treatment extending over a longer period of time. Resistant and recurrent infections are the standard. Lesions tend to be more numerous and are present over a larger focus than in the non-HIV infected patient. The cytomegalovirus and herpes simplex virus may also cause lesions on the foot, but are more commonly seen elsewhere.

Kaposi's Sarcoma. Kaposi's sarcoma (KS) is well-known to be one of the hallmarks of HIV infection. Generally, a KS lesion signifies late-stage AIDS. Kaposi's sarcoma is described in the literature to be present in 30% to 94% of patients with AIDS. Once a diagnosis of KS has been made, the survival of the patient usually ranges from 6 months to several years.

The lesions present as red-purple maculae which progress to papules, plaques, and nodules. In the lower extremity they can be seen on any surface of the foot or leg. It is not uncommon for serious GI tract problems to present once dermal KS is diagnosed. Occasionally these lesions are seen on the head and neck. Treatment for KS consists of radiotherapy, excision, laser ablation of the lesion, or intralesional injections of chemotherapeutic agents such as vincristin and vinblastin. Kaposi's sarcoma in AIDS patients is almost never fatal, so benign neglect is a treatment option. Other lesions which may present similar to KS are abscess eruptions due to *Staphylococcus aureus* or *Mycobacterium avium*. These should respond to antibiotic therapy.

Psoriasis. There is a slightly increased incidence of psoriasis in HIV-positive patients, as compared to the general population. The severity of the condition will increase during the later stages of the disease, due to the immunocompromised state of the patient.

CONCLUSION

In each of the neurologic and dermatologic manifestations, many variable signs and symptoms exist. The key for the podiatric physician is the recognition of the patient at risk, as well as the accompanying disease states. The podiatrist must be ready to treat the HIV-positive patient, or if necessary, make and confirm the diagnosis of HIV. With the number of HIV infections continually increasing, clinicians will undoubtedly be treating even more patients with this disease. AIDS is a multi-system disease requiring a multi-disciplinary medical team for proper management.