

decreased elimination half-life, probably attributable to the early gastric lavage associated with repeated instillation of active charcoal, both of which reduce enteral absorption of drugs

Continuous IV infusion of flumazenil was shown to be a better mode of treatment<sup>4,6</sup> than boluses, both because of its short half-life<sup>7</sup> (54 minutes) and the wish to avoid patient fluctuations in and out of coma. Rectal administration has recently been mentioned as a safe alternative regimen.<sup>8</sup> Long-term enteral administration, here described for the first time, was easy to carry out, obviated placement of IV lines, had a rapid onset, was as efficacious as the IV mode, was less costly, and was free from physical or mental side effects. Although not yet available in many countries, oral flumazenil administration has the potential to become the long-term treatment of choice for benzodiazepine-induced coma, especially in patients who are alternately awake and relapsing into coma.

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## PREVALENCE AND RISK FACTORS OF PERIPHERAL ARTERIAL DISEASE AMONG OLDER PATIENTS LIVING IN NURSING HOMES

*To the Editor:* Peripheral Arterial Disease (PAD) is one of the most common clinical manifestations of atherosclerosis in older subjects and represents an important cause of disability.<sup>1</sup> However, few studies have investigated the prevalence of the disease in very old patients and in older subjects living in nursing homes. In these patients, it may be very difficult to diagnose PAD based on clinical symptoms and physical signs, resulting in a systematic underestimation of its prevalence. This fact is relevant not only because it can lead to an accelerated worsening of the individual disability, but also because of the greater economic and assistance impact that will result when the disease reaches more advanced stages.

The objective of our study was to evaluate the prevalence of PAD, defined by a C.W. Doppler determination of an Ankle-to-Arm Index (AAI) < 0.90<sup>2-4</sup> and its relation with risk factors, in older patients living in nursing homes.

In 418 patients (83 men, 335 women, average age 83.7 ± 8.5 years, range 55 -102 years) living in two metropolitan nursing homes, the AAI was calculated by a senior physician using the C.W. Doppler technique according to carefully standardized procedures followed in our laboratory.<sup>2,3</sup> Medical history and main traditional cardiovascular risk factors were considered (age, male gender, hypertension, cigarette smoking, diabetes, hypercholesterolemia, and previous cardiovascular diseases). Using the ability to move or walk as the standard, patients were classified as completely incapable of moving, or bedridden; partially incapable of moving or moving with assistance; and able to move independently. Categorical variables were analyzed using the chi-square test; Student *t* test and analysis of variance were used to evaluate continuous variables. Multiple logistic regression analysis, forward stepwise method, was performed.

One hundred twenty-two patients (29.2%) were diagnosed as having PAD: the age- and sex-specific prevalence of PAD is reported in Table 1. In spite of the high prevalence of PAD, very few patients were symptomatic: no patients complained of claudication, and three patients had lower limb rest pain. To test the possibility that symptoms had been attenuated by reduced walking activity, the history of symptoms consistent with claudication was investigated in patients with evidence of PAD: only 15 of 122 patients had a medical history and Rose questionnaire<sup>5</sup> consistent with previous claudication. Among traditional risk factors, age greater than 95 years ( $P < .05$ ), systolic blood pressure values ( $P < .0001$ ), and previous history of myocardial infarction or angina ( $P < .05$ ) were positively and independently associated with PAD. Interestingly, prevalence of PAD was signif-

**Table 1. Prevalence of PAD According to Age-Classes in Men and Women**

Age-Classes (Years)	PAD n (%)		
	Men	Women	Total
55-64 n 14	1 (10)	0	1 (7.1)
65-74 n 54	5 (20)	5 (17.2)	10 (18.5)
75-84 n 129	13 (54.2)	31 (29.5)	44 (34.1)
85-94 n 193	8 (40)	45 (26)	53 (27.5)
95-102 n 28	0	14 (58.3)	14 (50)
Total	27 (32.5) $P < .05$	95 (24.4) $P < .01$	122 (29.2) $P < .01$

icantly higher among patients partially or completely incapable of moving (34/99, 34.3% and 68/179, 38%, respectively) than among patients able to walk independently (20/140, 14.3%,  $P < .0001$ ). Introducing the condition of partial or complete immobility into the multiple logistic model with other covariates resulted in strong and independent association with PAD ( $P < .0001$ ). In order to identify confounding effects, a stratified analysis, based on the conditions of independent mobility or partial and total immobility, was performed introducing traditional risk factors and all other covariates that could affect the individual ability in moving. Significant variables were then introduced in the multivariate system: PAD and immobility were still strongly and independently associated ( $P < .00001$ ). The reasons for this strong association are unknown. It appears extremely unlikely that the condition of partial or total immobility is determined mainly by the arteriopathy itself: in fact, few patients had medical histories consistent with claudication, and only three patients had lower limb rest pain at the time of the visit. On the other hand it is not clear how immobility can determine PAD or, at least, a reduction in the AAI values. It has been postulated that prolonged physical inactivity would reduce blood flow through main arteries and collateral vessels, thus inducing modifications in peripheral arteriolar resistances.<sup>6</sup> Moreover, hypotrophy of lower limb muscular mass consequent to prolonged inactivity could contribute to the reduction of vascular perfusion pressure. However, in the absence of instrumental vascular findings confirming the presence of arteriopathy, it may be the definition of PAD itself (AAI  $< 0.90$ ) that is inadequate for these patients. We can not exclude that, in these very old patients, low AAI values represent, to some extent, a physiological consequence of immobility rather than the expression of a true pathological condition. Further investigation that combines morphological information with AAI detection could contribute to our understanding of this topic.

We conclude that there is a high, systematically underestimated, age-related prevalence of PAD in older adults living in nursing homes. Conditions of partial or complete immobility seem to be strongly associated with evidence of PAD.

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## ASPERGILLUS FLAVUS MENINGITIS AND PONTINE HEMORRHAGE IN AN OLDER PATIENT

*To the Editor:* Central nervous system involvement by *Aspergillus* pathogen is rare and found mostly in immunocompromised hosts.<sup>1</sup> Clinical manifestations include thrombotic and hemorrhagic necrosis, a stroke-like picture, brain abscess, and chronic meningitis. Acute *Aspergillus* meningitis is extremely rare<sup>2</sup> and may occur in immunocompromised hosts. The case we describe is of particular interest, although we can only speculate on its pathogenesis and pathophysiology.

A 74-year-old man, was admitted to the hospital following abrupt onset of weakness of his left side. A year before his admission, and following an episode of transient ischemic attack, a CT disclosed a small lacunar brain infarction. The patient recovered spontaneously and was completely independent in activities of daily living.

On admission, the patient was stuporous, blood pressure was 130/70, the pulse 84 regular, rectal temperature was 38.3°C. He had complete left motor-sensory hemiplegia; his speech was slightly dysarthric, but there were no other neurological abnormalities. Laboratory findings upon admission were all within normal limits. Blood and urine cultures were negative. Fever persisted despite administration of broad spectrum antibiotics. The source of fever could not be identified. An echocardiogram was normal, and no vegetation was observed. Two brain CTs showed a fresh massive pontine hemorrhagic infarction. The paranasal sinuses and orbits appeared normal. A diagnostic lumbar puncture was per-

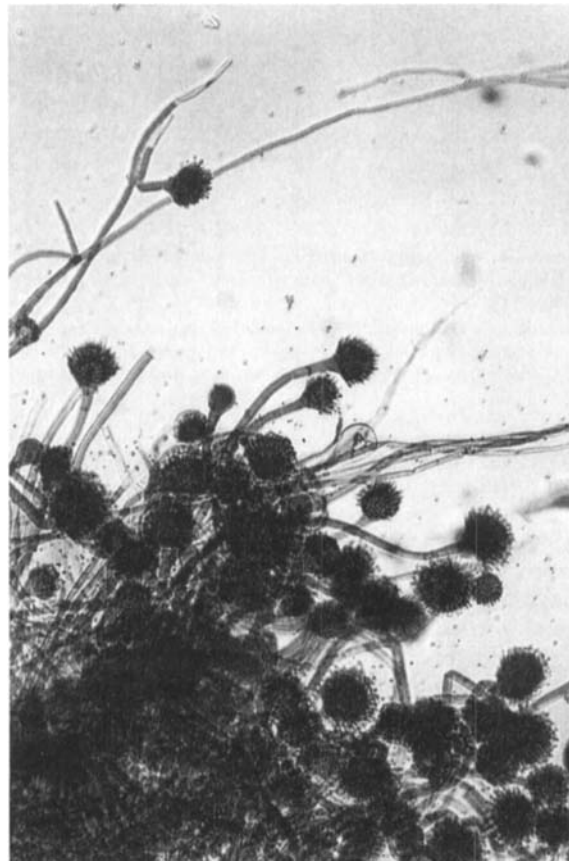


Figure 1. *Aspergillus Flavus*, magnification x 400.