Table 2: Comparison between prevalences of aetiologic agents and diseases found in falcons with and without aspergillosis.

Agent/Disease	With aspergillosis			Without aspergillosis	
	($n = 94$)	%		($n = 2000$)	%
Parasites					
Caryospora spp.	(16)	17.00	~	(317)	15.80
Serratospiculum seurati	(14)	14.90	~	(253)	12.65
Cestodes	(6)	6.38	<	(163)	8.15
Trematodes	(5)	5.32	~	(101)	5.05
Trichomoniasis	(4)	4.25	<	(148)	7.40
Babesia shortti	(4)	4.25	>	(22)	1.10
Candidosis	(1)	1.06	~	(13)	0.65
Capillaria spp.	(1)	1.06	~	(31)	1.55
Leucocytozoon toddi	(1)	1.06	~	(16)	0.80
Bacteria					
CFIDS	(29)	30.85	>	(240)	12.00
Bumblefoot	(5)	5.32	~	(81)	4.05
Mannheimia haemolytica	(4)	4.25	>	(2)	0.10
Escherichia coli	(3)	3.12	>	(20)	1.00
Clostridium perfringens	(2)	2.13	~	(29)	1.45
Viruses					
Falcon herpes virus	(2)	2.13	>	(6)	0.30
Pox virus	(2)	2.13	~	(44)	2.20

Identification of the causative virus was done postmortem. It is not excluded that more cases of herpes virus infection might have been missed, lacking a specific suspect and/or fatal outcomes.

Mannheimia (*Pastorella*) *haemolytica*, a Gram-negative highly pathogenic bacterium causative agent of the pneumonic pastorellosis, was associated with 4 cases of aspergillosis in this study (1 *A. fumigatus*, 2 *A. flavus,* and 1 *A. niger*), 2 of which showing fatal outcomes despite aggressive antifungal therapy. Table 2 shows that *M. haemolytica* was strikingly more prevalent in falcons with aspergillosis (4.25%) when compared with the control group (0.1%) apparently indicating a predisposing action for the mycotic disease. Clinical signs of avian pastorellosis, such as general malaise, respiratory distress, and diarrhea [25], are vague and partially overlapping those due to aspergillosis. Lack of recognition and of preventive treatment for underlying pastorellosis may lead to poor prognosis and negative therapy outcomes for the concomitant aspergillosis. The same should apply to *Escherichia coli* ($n = 3$, 1 death) (Table 1), which was prevalently found associated with aspergillosis (3.12% versus 1%) in this study (Table 2). These bacteria are potentially pathogenic for falcons [25], causing chronic diseases and immune dysfunctions that can predispose to aspergillosis and complicate its therapy. *Aspergillus* sp. association with *Pastorella multocida* has been previously described in turkeys [1].

In human medicine, aspergillosis also occurs as an opportunistic infection in the condition named idiopatic CD4+ T lymphocytopenia [26, 27], a subtype of the chronic fatigue syndrome (CFS), also called chronic fatigue and immune dysfunction syndrome (CFIDS) due to the frequency with which autoimmune defects and cellular and humoral deficiencies are recorded in human and animal patients as well [28]. It is acknowledged that about 1/10 of human CFIDS patients shift naturally to the condition called idiopathic CD4+ T cell lymphocytopenia (ICL), which is characterized by decreased CD4+ T cells count in the absence of HIV infection and occasional association with leukopenia and pan-hypogammaglobulinemia. Most cases of ICL, also called HIV-negative AIDS, fulfil the CDC criteria for CFIDS, and the two conditions appear today as variations in severity of a single disease [28]. Immunological anomalies such as leukopenia, lymphopenia, and hypogammaglobulinemia have been seen in birds of prey [14] and dogs and cats previously diagnosed with CFIDS [28]. It is comparatively interesting to note that CFIDS in this study was the underlying disease most commonly diagnosed in captive falcons with proved aspergillosis (29 reported cases and 4 deaths). In my experience, CFIDS is associated with staphylococcal infection and bacteraemia in birds of prey [14] and other animals [28–34]. The prevalence reported here should not be controversial because the prevalence of *Staphylococcus* spp. infections in the Spanish imperial eagle (*Aquila adalberti*) was as high as 45% in chicks handled without gloves, and 4% in chicks handled with gloves [35]. Apparently, the human-animal contact was the way of transmission. Reported captive falcons diagnosed with CFIDS are routinely subjected to human-animal interaction, intense training, and, therefore, oxidative stress, that favour CFIDS [31].

Conditioned illnesses are difficult to treat when underlying primary agents are not preliminarily eliminated [24]. As