Pneumocystis carinii is well known as a widespread, main pulmonary pathogen in patients with AIDS. Nevertheless, data on the frequency of the infection and on the incidence of P. carinii pneumonia in HIV-negative patients are rare, the precise epidemiology is therefore still unknown. The recent development of diagnostic techniques with a high sensitivity, e.g. polymerase chain reaction, allows the detection of symptomless, low amount carriers. Therefore, in a prospective study the prevalence of P. carinii infected persons and the frequency of P. carinii pneumonia in a collective of immunocompetent adult patients with chronic lung disease were determined.

Within a surveillance period of one year several bronchoalveolar lavage fluid samples of 77 patients (44 males, 33 females; age on an average: 49.8 years, range: 22-87), most of them with tuberculosis (26 %) or a bacterial pneumonia (21 %), were examined by Diff-Quik stain, direct immunofluorescence test, and polymerase chain reaction for P. carinii. Five patients (6.5 %) were found infected by polymerase chain reaction and direct immunofluorescence test, but not by the conventional staining technique. Although the 77 patients were not treated against P. carinii pneumonia, none of the patients developed a clinically significant episode of a P. carinii pneumonia within the surveillance period. Thus, the exclusive detection of P. carinii in bronchoalveolar lavage fluid samples does not justify the diagnosis of P. carinii pneumonia or the introduction of a specific therapy.

The evidence of the existence of clinically silent, immunocompetent carriers of P. carinii is getting conclusive at present as well as the evidence of an ubiquitous distribution of this parasitic fungi. The use of direct detection methods with a high sensitivity seems to be necessary for any epidemiological survey whereas P. carinii pneumonia is more sufficiently diagnosed by a combination of indirect procedures like arterial blood gas analysis and quick, simple staining techniques.