to see what might cause lymphoid tumors, which sometimes occur in patients with AIDS (acquired immune deficiency syndrome). The NCI group found that HBLV, rather than EBV, was a common viral denominator in six patients with disorders that affect B-cell production, two of whom were also infected with the AIDS virus.

"It's particularly impressive when a patient says, 'My life has changed. I caught what seemed to be a cold and have never recovered from it.'" Anthony Komaroff

The human B-lymphotropic virus that the NCI group now reports is a DNA virus that resembles EBV and other herpes-like viruses in its appearance, but differs in several respects. It has a specific affinity for freshly isolated B lymphocytes and "does not transform B cells as EBV does," says Salahuddin. "HBLV virus particles are dispersed throughout the Golgi bodies of an infected B cell rather than being clustered like cytomegalovirus, another member of the herpes family. And many mature healthy virus particles are produced from HBLV-infected cells, which is something you don't see with EBV." Does HBLV cause chronic mononucleosis-like syndrome? "It's being investigated," says Salahuddin.

In fact, the possible connection between HBLV and the chronic mononucleosis-like syndrome is being investigated to the extent that the NCI researchers are collaborating with Cheney and many other investigators—in Boston, New York, Houston, Fort Lauderdale, and Miami, for example—who report similar disease outbreaks. But before he identifies any link between HBLV and the chronic syndrome, Gallo wants to test sera from a large number of people who do not have the disease, to see how many of them might be infected with HBLV.

Anthony Komaroff of Brigham and Women's Hospital in Boston and a member of the collaborative network, points to several possible causes of the chronic syndrome he is studying in the New England area. "Is there a new variant of EBV?" he asks. "Is some other virus reactivating a latent EBV infection? Or might there be some other force, some environmental toxin, perhaps? This disease may have a number of causes, and even stress could be an activating factor." With respect to the possibility that HBLV may be linked to the chronic mononucleosis-like syndrome, Komaroff says that the data are too preliminary to interpret.

Komaroff indicates that many of the symptoms of the illness—chronic fatigue, headaches, recurrent sore throat, recurrent fevers, swollen lymph glands, inability to concentrate, some memory impairment, and sleep disorders—could occur with other kinds of infections. But he says, "it's particularly impressive when a patient says, 'My life has changed. I caught what seemed to be a cold and I have never recovered from it.' We've heard that over and over." The prognosis for patients with the chronic illness is still uncertain.

Another intriguing aspect of the chronic disease involves its neurological complications, which in many respects resemble those seen in some AIDS patients. Paul Levine of NCI recently interviewed more than 70 people from Nevada and California who complain of the chronic syndrome and was struck by the fact that many patients are now unable to perform mental tasks that were once routine for them. Perhaps different herpes-like viruses, including HBLV, act in concert to produce nervous system damage as well as B-lymphocyte abnormalities.

More women than men suffer from the chronic syndrome, which Cheney explains on the basis of more women holding jobs that put them in frequent contact with infectious agents. Some patients are completely debilitated by the disease and lose their jobs. Most go on with their lives, often at a reduced level of activity.

Chronic mononucleosis-like syndrome is not a lethal disease, but like mononucleosis it seems to be highly infectious. Epstein-Barr virus, which causes mononucleosis, is present in saliva and can be spread by kissing, sharing food, dishes, or bathrooms, or coming in contact with someone who is sneezing or coughing. The chronic syndrome has a similar pattern of transmission through casual contact. The new human B-lymphotropic virus also seems to be fairly infectious.

But whether HBLV, EBV, or any other virus or nonbiological agents or combinations of agents cause outbreaks of chronic mononucleosis-like syndrome is far from proven. ■ **DEBORAH M. BARNES**

ADDITIONAL READING

J. F. Jones *et al.*, "Evidence for active Epstein-Barr virus infection in patients with persistent unexplained illnesses: elevated anti-early antigen antibodies," *Ann. Intern. Med.* **102**, 1 (1985).

S. E. Straus *et al.*, "Persisting illness and fatigue in adults with evidence of Epstein-Barr virus infection," *ibid.*, p. 7.

Briefing:

What Does it Mean to Be "Rare" or "Likely"?

Frederick Mosteller, a statistician at Harvard University, would like to know what people think they mean when they use ordinary expressions such as "rare" or "likely." His goal, he says, is to decide whether there are unwritten but implicitly agreed upon definitions for these probabilistic terms and, if so, to publish them in the hope that people will eventually come to use the words more meaningfully. If they do, he says, there might be better communication between scientists and laypeople, and between doctors and patients.

When a doctor tells a patient that the side effects of a medication are "rare," do the doctor and the patient have the same conception of what "rare" means? And does rare always mean the same thing to the same individual? One study by R. E. A. Mapes found that more than half of a group of doctors surveyed think that a rare side effect of a beta blocker is one that occurs less than 1 in 1000 times, whereas only about one-fifth of the doctors said that an antihistamine's side effects are rare when they occur less than 1 in 1000 times. The side effects of an antihistamine are mild compared with those of a beta blocker.

Mosteller began this project when he noticed himself using terms such as "infrequent" or "common" in his own published papers in order to avoid writing down the same numbers over and over again to describe the likelihood of an event. "It is very hard to keep writing the same numbers. I found myself wanting to use other expressions," he says.

But these probabilistic expressions are never formally defined. So, in the first stage of his study, Mosteller and his colleagues contacted hundreds of physicians and medical sudents by means of a computer network, based at Massachusetts General Hospital. The investigators asked these respondents what, numerically, they think various expressions of probability mean and compared their results to those of others who had conducted similar studies in the past.

Their conclusion, published in the 18 September issue of the *New England Journal of Medicine*, is that there does seem to be a common, unstated, understanding of what these expressions mean. Medical professionals think "almost certain," for example, means about 95% likely and "very likely" means that an event is about 90% likely to occur. ■ **GINA KOLATA**