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Myalgic encephalomyelitis

The roots of chronic fatigue

ME is a puzzling illness, but it appears to have a biological basis and a test for it could be developed

A DISEASE that carries with it a social stigma causes additional and unnecessary suffering. This has often been so with myalgic encephalomyelitis (ME), or chronic-fatigue syndrome, as it is also known. Despite debilitating symptoms, patients have been accused of suffering from an imaginary illness: "yuppie flu". Doctors have struggled to distinguish the ailing from the malingering. Nonetheless, evidence has grown in recent years that the syndrome is real, and now there is news that is has its roots in genetics.

ME manifests as extreme exhaustion, something that may include a range of other symptoms, such as disturbed sleep, difficulties in remembering and concentrating, headaches, and painful muscles and joints. Psychological symptoms, such as anxiety and irritability, can also be present. As the symptoms can vary in severity, the syndrome can be hard to identify, and patients can suffer for months before a diagnosis is made.

However, new hope for ME sufferers arrived this week at a conference in Cambridge, in Britain. The event, organised by ME Research UK and the Irish ME Trust, two charities that help to fund studies and assist sufferers, was attended by researchers investigating what causes the illness and how it could be treated.

Jonathan Kerr of St George's University of London told the meeting that with his colleagues they have identified 88 genes which are expressed differently in the blood of patients who had been diagnosed with ME. Moreover, in studying the records of 55 patients with ME, they found that they could divide them into seven separate sub-types that consistently pair distinct genetic patterns with a combination and severity of patients' symptoms. This, says Dr Kerr, points to a biological basis for the illness and holds out hope that a blood test could be developed to identify its different forms. His group are now trying to find the biological markers that such a blood test would need to detect.

ME, myself, why?

One tactic for dealing with ME is to treat its symptoms with drugs that are already used against other diseases. Patients with some of the severest symptoms suffer from low blood pressure and have difficulty regulating their heartbeat. Julia Newton, of Newcastle University in Britain, says this is because of problems with their autonomic nervous systems, which is responsible for subconscious activities. In studies using a magnetic-resonance imaging scanner, she found a build-up of acid in the muscles of ME patients when they took exercise. This can cause muscle weakness and pain. Dr Newton believes the build-up could be influenced entirely, or at least in part, by the degree to which the autonomic nervous system fails to properly maintain blood flow. It could also mean that drugs that already exist to help improve blood flow might also help some ME patients.

But what triggers ME? Some estimates put its occurrence at around one in 200 people in America and Britain. Sufferers are often in their 20s and 30s, and more women are affected than men. That it is so widespread suggests to some researchers that there are many causes, including exposure to certain viruses and other infectious diseases.

A long period of fatigue after suffering from an infectious disease is not unusual. At the conference, a team of Australian researchers speculated that many cases of ME are in fact cases of "post-infectious chronic fatigue". Stephen Graves, of the Australian Rickettsial Reference Laboratory, said they had found a proportion of Australian ME sufferers may have a genetic predisposition to developing ME as a result of exposure to Q Fever or Flinders Island Spotted Fever. These are a pair of relatively uncommon diseases caused by two bacteria which can pass between animals and humans. If their hypothesis is correct, Dr Graves believes the incidence of ME in Australia may be reduced by greater public-health measures.

Although the trigger for most cases of ME may remain a mystery, the discovery of its biological roots and the promise of a test will bring hope of a diagnosis to sufferers. And, perhaps, inspire a sudden recovery in the malingerers. ■