Meningitis: Does the killer lurk in genes?

As more children die of meningitis, anxious parents and doctors are pursuing a possible family link

PARENTS and relatives of those who have died form meningitis are to help researchers discover why some are more susceptible than others to the bacteria that cause the infection and kill within hours.

The £20,000 project, to be launched by the Meningitis Research Foundation this week, is to investigate a possible inherited susceptibility to the meningococcal bacteria which one in 10 people carry, but which live harmlessly in the nose.

At least 140 people have died of meningitis so far this year, slightly more than would be expected. On Monday it was announced that Jenny Cullen, a 19-year-old Oxford undergraduate, had died after retuning home for the Christmas holidays.

Many parents have been keeping their children off school. They want to know why this killer disease is still prevalent. They also question whether the Government is spending enough on research and public information.

Each year, around 2,200 people in this country have meningococcal infections, with a peak in pre-school children and again in 16 to 19 year olds. Infection rises during the winter perhaps because flue, colds and other ailments put the immune system under pressure, or because winter ailments enhance an innate susceptibility. “In one study by the Public Health Laboratory Service, 60 out of 350 cases in a four-week period could have been because of exposure to flue,” said a spokesman.

Dr Keith Cartwright, of the Gloucester Public Health Laboratory, points out: “The picture is not at all straightforward. Depression and stress may also weaken reaction to infection, close contact, and even smoking, could raise susceptibility.”

Transmission is by nose droplets, but it is relatively difficult as a bacteria can barely survive outside the nose. But some people might have an inherited genetic fault which could make them more vulnerable to changes in the bacteria. Last week, three sisters in one Durham family were thought to have the illness. During the new research, to be headed by Prof Michael Levin at St Mary’s Hospital, Paddington, blood from 500 bereaved parents will be analysed for genetic influence. This might lead to a test to identify those at risk, or improved treatment.

The Meningitis Research Foundation is funding a £200,000 three-year project at the National Institute for Biological Standards and Control

The main research effort is directed at finding effective vaccines. Dr Cartwright, who is involved in trials in Gloucestershire, hopes that within 18 months, reliable jabs against meningococcal C will be available for children. The strain causes 26 per cent of meningitis and kills about nine per cent of sufferers. An existing vaccine against C is not effective in children under two, and does not last in adults. But it is useful in an outbreak: children at Shotton Hall Comprehensive school in Durham, where there were nine suspected cases last week were inoculated.

Dr Cartwright says: “The new C vaccine tests are going well. Parents involved are delighted, and we expect that eventually the new vaccine will be given alongside other inoculations during the first six months of life.”
It could eliminate the C strain rather as the Hib vaccine for pre-school children had virtually banished the life-threatening Hemophilus influenzae type b, another form of meningitis. Protection against meningococcal B strain, which causes 70 per cent of infections, is much more difficult and a good vaccine could be five to seven years off. The Meningitis Research Foundation is funding a £200,000, three-year project at the National Institute for Biological Standards and Control. Scientists will study 10 to 20-year-old samples of the B strain to chart how it has genetically “drifted” over the years and so predict how vaccines should be made up.

Would more money help? The Medical Research Council spends about £1.5 million a year on the “basic science” of meningitis, and the charities contribute another £500,000. An MRC spokesman insists there is “no financial ring-fencing. It is always possible to spend more, but we respond to good scientific proposals. The better they are, the more likely we are to fund them. By way of comparison, back pain receives £0.5 million, motor neurone disease £1 million and Alzheimer’s £4.5 million of a total MRC budget of £290 million.

Would more publicity earlier in the winter save lives? GPs and health authorities were given new guidelines this year on how to act in an emergency, but there are no plans for a campaign aimed at parents. The main drive to alert parents has come form the charities. Susie Hill of the MRF, says: “Sadly, it still happens that GPs do not respond quickly enough. Parents are often the best judge of their children’s state of health.”

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