Increasing the age limit for Lynch syndrome genetic testing may save lives

May 29 2017

Raising the age limit for routine genetic testing in colorectal cancer could identify more cases of families affected by Lynch syndrome, a condition that accounts for around 5% of all colon cancers, according to new research to be presented at the annual conference of the European Society of Human Genetics today (Monday). Professor Nicoline Hoogerbrugge, head of the Radboud university medical centre expert centre on hereditary cancers, Nijmegen, The Netherlands, will tell the conference that there is an urgent need to find families carrying a mutation for Lynch syndrome in order to decrease mortality from the disease.

"We know that, at present, only between 20% and 30% of people with Lynch syndrome have been identified. Most countries rely on detection through family history and early age at diagnosis, and this leads to significant underdiagnosis. We have shown that, by raising the age limit for testing we are able to detect new affected families who would not have been identified previously," she says.

The researchers studied results of mismatch repair (MMR) testing in patients up to 70 years of age with colorectal cancer from 14 pathology laboratories. Previously, in The Netherlands, such testing was carried routinely in patients who were aged up to 50. Of 87 patients whose results suggested that they are at high risk of Lynch syndrome, 35 were referred for genetic counselling.

After further testing, Lynch syndrome mutations were definitely

identified in 13 of 32 patients with complete genetic testing, and 11 of these patients came from families in which the disease had previously not been detected. Eight of them were aged between 50 and 70 and did not comply with previous referral criteria for genetic testing based on age and family history.

"If we had not studied these older patients, their family predisposition to Lynch syndrome would not have been detected until it was too late," says Prof Hoogerbrugge. "In every affected family, we can find an average of three people with Lynch. This is clearly a massive advance in the identification of people at risk."

By implementing appropriate prevention measures, deaths from Lynch syndrome in affected families can be reduced by more than 60% over 15 years, the researchers say. The disease, otherwise known as hereditary nonpolyposis colorectal cancer (HNPCC), also leads to an increased risk of cancers of the stomach, upper urinary tract, brain, skin and prostate, with women carriers at an additional of endometrial and ovarian cancers.

The study covered 20% of the Dutch population. "Part of our results surprised us; we had not expected to find so many mutations in Lynch syndrome associated genes with a relatively high risk of developing tumours in patients without a family history of the disease. This has only strengthened our desire to see an increase in the age limit for MMR testing applied across The Netherlands, and indeed across Europe, so that every new colorectal cancer patient aged below 70 can benefit from it," says Prof Hoogerbrugge.

"The age limit in the UK has recently been increased; although it is too early to be able to see signs of value there, we have been able to provide clear evidence of its advantages in The Netherlands, both for patients and for health services," she concludes.

Chair of the ESHG conference, Professor Joris Veltman, Director of the Institute of Genetic Medicine at Newcastle University, Newcastle, United Kingdom, said: "It is very important to recognise whether a person suffers from sporadic or familiar cancer, as this identifies family members at risk who can take preventative measures. For this, genetic tests need to be done in cancer patients. This study shows that we should extend these genetic tests to older colorectal cancer patients of whom a significant number suffer from familiar cancer."

Provided by European Society of Human Genetics