Could low albumin be a marker of an undiagnosed cancer?

Cancer is an increasingly common problem that affects one-in-two British people over the course of their lifetime. Survival rates are getting better with increased awareness, better tests and more effective treatments, but the UK still lags behind other high-income countries. A significant problem is delayed diagnosis, which is important as catching and treating a cancer early significantly improves the chances a patient will survive and have a good outcome. One method that researchers have been exploring is whether changes in common blood tests can give doctors an early clue that their patient may have an undiagnosed cancer. Our research looked at one such blood test for a protein called albumin.

Albumin is the major protein found in the human blood stream. It is made by the liver, and has a number of different roles. The levels of albumin in a patient's blood can be affected by a number of diseases, including infection, heart failure, trauma, liver failure and kidney failure. Albumin levels can also be lowered by cancer, and they can get to very low levels if the cancer is advanced or spread around the body. Our study looked at whether a patient with an unexplained low albumin level was at an increased risk of being diagnosed with cancer in the following 12-month period.

In order to answer this question, we used a large database called the Clinical Practice Research Datalink (CPRD), which contains millions of anonymous GP medical records from patients across the UK. We looked at patients who had had a blood test to check their albumin levels, and followed them afterwards to see if any of them went on to be diagnosed with cancer. We also checked for other medical conditions that might affect their albumin levels. We then compared patients with normal albumin levels with those who had low albumin levels.

Amongst over 100,000 patients that had undergone a blood test to check their albumin levels, 6% had low albumin levels. Patients in this group were more likely to be diagnosed with a cancer in the following 12 months compared to patients who had a normal albumin level, even when taking into account other possible reasons for a low albumin level.

To our knowledge, this is the first time a study has been performed to check for a relationship between low albumin levels and undiagnosed cancers in GP patients. Similar studies have been performed to show that low haemoglobin levels (anaemia) or high calcium levels can suggest a patient may have a cancer that has not been picked up yet. Our study was not rigorous enough to be certain that an unexplained low albumin suggests a patient has an undiagnosed cancer. This would need to be confirmed in further studies using similar groups of patients before it can be recommended to GPs to use as a way of diagnosing cancer earlier.

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