Colorectal cancer survival advantage in MUTYH-associated polyposis

2 November 2010

Survival for colorectal cancer patients with MUTYH-associated polyposis was statistically significantly better than for patients with colorectal cancer from the general population, according to a recent study published online November 2 in *The Journal of the National Cancer Institute.*

People who inherit a mutation in the MUTYH gene have nearly a 100% risk for developing colon cancer at some point in their lifetimes. But it is unknown whether specific histological and molecular genetic features of cancer associated with this genotype influence tumor behavior and survival.

To determine whether patients with MUTYH-associated polyposis colorectal cancer had different survival rates than control colorectal cancer patients, Maartje Nielsen, M.D., of the Leiden University Medical Center, and colleagues, conducted a multicenter cohort study in Europe that included 147 patients with MUTYH-associated polyposis colorectal cancer and 272 population-based control patients with colorectal cancer. Control and study group patients were matched for country, stage, age and year at diagnosis, and cancer subsite.

The researchers found that survival of patients with MUTYH-associated polyposis colorectal cancer was statistically significantly better than for control patients with colorectal cancer. Their five-year survival rate was 78% compared with 63% for the control group. Survival benefit was higher among patients with stage I and II disease than for those with stage III and IV disease.

The researchers offer a speculation about the better survival rate among the patients with MUTYH-associated polyposis colorectal cancer, compared with the control patients: "A compromised base excision repair system could render MUTYH-associated polyposis colorectal cancer more immunogenic than sporadic colorectal cancers, which are characterized predominantly by chromosomal instability."

In an accompanying editorial, Henry T. Lynch, MD, and Stephen J. Lanspa, MD, of Creighton University, hypothesize that the cancer-causing mutations in MUTYH, as well as in the mismatch repair genes predisposing to Lynch syndrome, are the causal factors for their respective survival advantages. Furthermore, they write, "the ultimate understanding of the pathogenetic pathways elicited by these respective mutations may serve as models for studying both survival and increased virulence of hereditary and sporadic colorectal cancers."

Provided by Journal of the National Cancer Institute