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Detection of mini chromosome maintenance proteins in stool samples and rectal lavage specimens. An alternative to surveillance colonoscopy in ulcerative colitis?

Patients with ulcerative colitis (UC) are at an increased risk of developing colorectal cancer, particularly if they have had UC from a young age, for a long time or involving a large part of their large bowel. Although there is controversy over its effectiveness, most centres currently carry out regular colonoscopies (telescopic examinations of the bowel) in patients at high risk in an attempt to detect cancers or the changes that occur in the bowel before cancer develops. These changes are known as dysplasia and are detected by standard examination of large numbers of random tissue biopsies under a microscope. Detecting dysplasia in UC can be difficult for 2 main reasons. Firstly, a large amount of inflammation in the bowel can be difficult to distinguish from dysplasia. Secondly, dysplasia is patchy and thus can be missed when random biopsies are taken. Dysplasia does sometimes occur in areas that look abnormal but usually occurs in bowel that looks no different from areas without dysplasia.

Large numbers of normal colonoscopies are carried out to detect small numbers of patients with either dysplasia or cancer. Also, when cancers are detected they are often at a relatively advanced stage and this leads to a higher death rate. Early colorectal cancers treated by surgery have a far greater survival than more advanced ones. Methods that could detect dysplasia or cancer at an earlier stage and more accurately are likely to lead to improved survival. Also, colonoscopies can be unpleasant procedures to experience and there is a small risk of complications which rarely can be serious. Any technique that was less invasive would reduce the number of colonoscopies patients needed to have.

Recent research has suggested that the detection of certain proteins from the cervix and urine can increase the accuracy of detection of early cancer or dysplasia in the bladder or cervix. We propose to establish whether the detection of these proteins is possible in stool samples or rectal lavages from patients with UC and, if so, whether they are an equivalent or superior alternative to colonoscopy.