

Awarded DDW "POSTER OF DISTINCTION"

**DISTINGUISHING NEOPLASTIC FROM NON-NEOPLASTIC COLONIC POLYPS USING LASER-INDUCED FLUORESCENCE: RESULTS OF A PROSPECTIVE MULTICENTER TRIAL**

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*PURPOSE:* Previous studies have shown the potential of laser-induced fluorescence (LIF) to distinguish between neoplastic and non-neoplastic polyps of the colon but have been limited by retrospective study design and/or small sample size. The purpose of the trial was to determine the ability of LIF to make this determination in a prospective, multicenter trial. *METHODS:* Identical LIF devices (SpectraScience, Minneapolis, MN) were used at five trial sites. Fluorescence excitation was at 337 nm and LIF was collected over the wavelength range 400-800 nm. Patients undergoing routine colonoscopy were asked to enroll in the study. When a polyp was identified, LIF measurements were made from the polyp and surrounding normal appearing mucosa. Biopsies were obtained from all sites. The polyp was then resected by standard methods. *RESULTS:* 112 neoplastic polyps and 154 non-neoplastic polyps and normal mucosa measurements from 110 patients were available for study. The endoscopist's impression combined with LIF was able to identify neoplastic lesions with sensitivity 97%, specificity 75%, negative predictive value 97% and positive predictive value 74%. These values were significantly better than the endoscopist's unaided impression of polyp type. *CONCLUSION:* LIF can accurately distinguish neoplastic from non-neoplastic tissues and may be a useful adjunct to endoscopy.