THE ACCURACY OF THE BIOSCANNER TRIMPROB, A NON-INVASIVE TOOL, FOR THE DIAGNOSIS OF PRENEOPLASTIC COLON LESIONS.
A DOUBLE-BLIND PROSPECTIVE STUDY

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**AIM:** To evaluate the diagnostic accuracy of the TRIMprob® Tissue Resonance Interaction Method, a non invasive device (developed to detect differences in electromagnetic properties of neoplastic and normal tissues) in detecting pre-neoplastic colon lesions.

**METHODS:** This was a single-centre pilot study. Before colonoscopy, each patient was screened with the TRIMprobe for colonic lesions by an operator in blind. The TRIMprob was moved over the surface of the abdomen area, with the patient standing, between the operator and the system receiver. The signal variation of 3 spectral lines, for 465-MHz, 930-MHz, and 1395-MHz frequencies were recorded. The different damped cellular elastoelectrical vibrations in microtubules reveals abnormal tissues. Biopsies collected during colonoscopy were used as Gold Standard. Statistical analysis was performed by chi-squared test.

**RESULTS:** A total of 305 consecutive patients (mean age: 59 years) undergoing colonoscopy were enrolled. The TRIMprob was able to detect colonic adenomas greater than 0.5 cm in 91% of patients. Sensitivity, specificity, VPP and VPN of the Bioscanner compared to the histological examination were 98.7%; 90.6%; 91.7% and 98.5% respectively. The concordance of the results of the two tests was highly significant (p < 0.0001).

In addition the device, according to the Gold Standard was able to identify histology in 94.8% of cases and according to endoscopy to identify the pattern (hyperplastic or adenomas), number and location of polyps.

**CONCLUSIONS:** The simplicity and the high diagnostic yield of the TRIMprob suggest that this method should be suitable as a first-level screening tool in detecting pre-neoplastic colon lesions.