Gastroenterologie Wettingen
Dr. med. Martin Geyer • FMH für Gastroenterologie und Innere Medizin

University Hospital Basel

Carbon dioxide insufflation in colonoscopy is safe: Prospective trial on of 348 patients

Geyer M[1], Guller U[2], Beglinger Ch[3]
[1]Gastroenterologie Wettingen, [2]Dept. of Surgery, University of Bern [3]Dept. of Gastroenterology, University Hospital, Basel

ABSTRACT: The use of CO2 insufflation in endoscopy especially colonoscopy, enteroscopy, and endoscopic retrograde cholangio-pancreatographie appears to be safe and more comfortable for the patient. However, standard room air continues to be used in the vast majority of endoscopic units and the safety of CO2 use for colonoscopy remains a matter of debate, particularly in sedated patients. Therefore, the objective of the present prospective trial was to assess the safety of CO2 colonoscopies.

METHODS: To collect more safety data about performance of CO2 colonoscopy in daily practice an additional 200 consecutive, non selected referred patient should be examined with CO2 under contineous transcutaneous CO2 measurement with the Sentec capno-graph in a single Swiss gastroenterologists practice. For final analysis the 109 patient with CO2 colonoscopy from our former randomized CO2 colonoscopy study were included. Beside baseline characteristics, Propofol dosage and complication were assessed. Furthermore it was looked for correlation between administered CO2 amount and CO2 increase. Statistics were done with SPSS Version 11.0.

RESULTS in mean and standard deviation: From April 2008 to September 2008 348 patients in total underwent a colonoscopy with CO2, 238 thereof were consecutive and 109 patients from our first study. 57% were women and 43% men with an age of 60.2±12.8. The propofol dosage was 136±64mg and all but 2 patients were sedated. CO2 values at baseline were 34.7±5.3mmHg respectively 38.9±.5.5mmHg while reaching the ileum and 36.9mmHg±5mmHg at the end of the examination (fig. 1). CO2 raised in maximum 4.5±3.6mmHg (fig. 2). All this parameters did not significantly differ in the two merged collectives. No correlation could be found between the inflated amount of CO2 and the CO2 increase (correlation coefficient =0.001, p-value= 0.84) (fig. 3). Neither respiratory side effects as ventilation or mechanical airway assistance nor any other complications occurred.

fig. 3: Correlation insufflated CO2 amount and CO2 rise

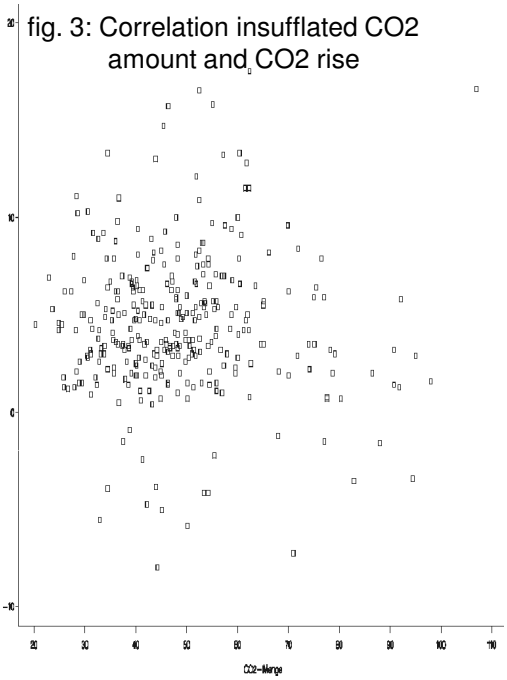


fig. 4: technical equipment

fig. 1: CO2 transcutaneous

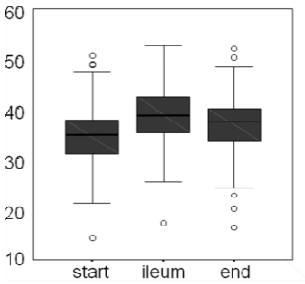
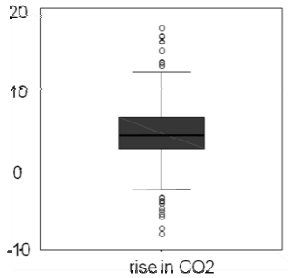


fig. 2: CO2 maximal rise/difference



CONCLUSIONS: The present prospective study based on the largest patient sample in the literature provides compelling evidence that CO2 colonoscopy is extremely safe without relevant rise in transcutaneously measured CO2. Thanks to newer generation of insufflators it is easy to use for the endoscopist (fig. 4).

DISCLOSURE: All authors listed above do not have any financial or other relationship to disclose.