

**Carbon dioxide insufflation in routine colonoscopy: safe and more comfortable**Geyer M<sup>1</sup>, Beglinger Ch<sup>2</sup>*1 Gastroenterologie Wettingen, 2 Dept. of Gastroenterology, University Hospital, Basel*

**Background:** Many patients experience pain and discomfort after colonoscopy. Preliminary studies indicate that insufflation of carbon dioxide (CO<sub>2</sub>) can reduce periprocedural pain although air insufflation has remained the standard procedure. It is therefore of interest to develop methods that can reduce patient discomfort.

**Methods:** 200 consecutive patients undergoing colonoscopy in a private GI practice will be enrolled in this study. Patients are randomly assigned to either CO<sub>2</sub> or air insufflation (double blind procedure). Pain and bloating and overall satisfaction are assessed on a 10 point VAS scale during and after the examination at 1, 3, 6 and 24 hours. Transcutaneous CO<sub>2</sub> is continuously measured with a Capnograph, as CO<sub>2</sub> insufflation might lead to CO<sub>2</sub> retention.

**Results:** Up to now a total of 147 patients have been enrolled. 75 patients were randomized to CO<sub>2</sub> (group 1) and 72 to normal air (group 2). The baseline characteristics were similar in both groups with respect to age, gender and bmi. The mean propofol dose was 132 ± 54 mg vs 115 ± 50 mg, respectively. The time to reach the ileum and the withdrawal time were 7.8 ± 4.4 and 13.1 ± 5.1, respectively (group 1) and 6.4 ± 4.2 and 12.5 ± 4.8 min (group 2, ns). pCO<sub>2</sub> at the end of procedure was 35.6 ± 4.4 mm Hg (in group 1) versus 36.0 ± 6.3 mm Hg (group 2, ns). No significant respiratory distress and no relevant complication occurred. In the post procedure recovery period in the office there was a strong tendency and over the 24 h thereafter (24 h VAS sum score) significant (p values ranging from 0.04-0.02) less bloating and less pain in group 1 (VAS sum score of 2.7, 1.5; 5.0 and 3.4) compared to group 2 (4.3, 2.1, 11.0 and 6.1). Finally, a higher satisfaction score (p=0.008) could be noted. The overall acceptance of the colonoscopy was excellent.

**Conclusion:** The preliminary data of this study indicate that CO<sub>2</sub> insufflation can significantly reduce bloating and pain in routine colonoscopy. The procedure seems to be safe as no significant differences in CO<sub>2</sub> measurements were seen.