

# Clinical Gastroenterology and Hepatology

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#### **Butyrate paradox**

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Butyrate reduces colorectal cancer development risk, being transported into epithelial cells of the colon via monocarboxylate transporter 1 (MCT1) and sodium-coupled monocarboxylate transporter 1 (SMCT1). Experimentally, tumor cells of the colon epithelium show a decrease in butyrate adsorption, probably due to MCT1 and SMCT1 proteins expression decrease.

To study butyrate level in copro filtrate samples of patients with colorectal cancer.

**Materials and methods:** 21 patients with newly diagnosed colorectal cancer were examined: 10 males with a median age of 71 (61-73) years old and 11 females with a median age of 64 (63-74) years old. The concentration of short-chain fatty acids (SCFA, C2-C6) in copro filtrate samples of all patients was studied using gas-liquid chromatography.

**Results:** Patients showed the SCFA total level decrease – 5.2 (4.2-6.8) mg/g, suggesting the metabolic activity decrease in the colon microflora, but also butyrate concentration variability, with median value of 0.953 (0.518-4.275) mg/g and its share of 18 (13-22)%. The studied group showed 47.6% of decrease cases in butyrate level, 23.8% had an increase, 28.6% showed normal values.

Conclusions: Studies have shown that butyrate has tumor suppression properties, which is probably due to its effect as a histone deacetylase inhibitor. It also promotes carcinogenesis in various models of colorectal cancer. This discrepancy in the effect of butyrate on the neoplastic process is called the "Butyrate paradox" (PedroGonçalves et al, 2016) and is possibly related to the concentration of butyrate.

A deeper understanding of microbial metabolites' action may open up new possibilities for non-invasive biomarkers search.

#### Recent publications

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#### **Biography**

Alina Makarova is a Gastroenterologist, Junior Researcher at the Laboratory of Functional Diagnostics of Intestinal Diseases at the Loginov Moscow Clinical Scientific Center. She was trained in the specialty of medical care in the State Medical Institution " North Ossetian State Medical Academy& quot; of the Ministry of Health of the Russian Federation. Vladikavkaz, Res. North Ossetia Alania. She Passed the primary accreditation in the specialty of medical care on 12.07.2017 on the basis of the State Medical Institution " North Ossetian State Medical Academy & quot; of the Ministry of Health of the Russian Federation. Vladikavkaz, Res. North Ossetia Alania. She completed a clinical residency in the specialty " gastroenterology & quot; on the basis of the State Medical Institution of the Moscow State Medical Center named after A. S. Loginov DZM.

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# SC - SBL redirect stem cell growth by using single beam laser and apply the appropriate conditions to produce modified cancer attacking gene

#### Aya Attia

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Redirect stem cell growth by using single beam laser and apply the appropriate conditions to produce modified gene can attack cancer cells at any stage. The stem cell which is axis of study is obtained from 5th day blastocyst (Embryonic stem cells which is Totipotent ) and it is also defined by the expression of several transcription factors and cell surface proteins. The transcription factors Oct-4, Nanog, and Sox2 form the core regulatory network that ensures the suppression of genes that lead to differentiation and the maintenance of pluripotency. The cell surface antigens most commonly used to identify hES cells are the glycolipids stage specific embryonic antigen 3 and 4 and the keratan sulfate antigens Tra-1-60 and Tra-1-81. By using human embryonic stem cells to produce specialized cells and treating it with special technique, then applying the standard scaffold with special characters, the aim is to produce gene which can attack the growing cancer cells at any stage. The study put focus on replacing the P35g – site which control process of apoptosis. The study has two major dimensions, first, is physical one "using the idea of remote control" as you can manage the gene behavior physically with changing special frequencies. Second, chemical side, by using some enhancers and inducers during the flux of the modified gene.

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# Breastfeeding in the prevention of postpartum Acute Pancreatitis (AP). A sicilian population-based case-control study

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**Background:** Gallstones acute pancreatitis has increased incidence in young women in the 2 years postpartum. Middle-aged women with a longer period of breastfeeding have less hospitalization for gallbladder disease.

**Methods:** We identified all Sicilian women who delivered (2013-2016) and had acute pancreatitis within 2 years postpartum, reviewed their medical records and for each case we matched 4 women of the same age (+ 5 years), date (+ 30 days) and hospital of delivery without acute pancreatitis. Univariate and multivariate logistic regression was used to estimate the Odds Ratio (OR) to assess associations between acute pancreatitis and clinical variables.

**Results:** In the 74 women with AP and 298 controls at univariate analysis: > 6 months oral contraception history (p<0.01 - OR 3.30 - 95% CI 1.33-8.16); previous biliary disease (p < 0.001 - OR 5.90 - 95% CI 1.98-17.57) and smoking (p = 0.035 - OR 2.04 - 95% CI 1.04-4.0) were predictors of acute pancreatitis; amenorrhea > 3 months (p < 0.001 - OR 0.34 - 95% CI 0.19-0.59) and breastfeeding > 3 months (p < 0.001 - OR 0.07 - 95% CI 0.03-0.14) were protective. At multivariate previous biliary disease (p = 0.011 - OR 5.49 - 95% CI 1.48-20.38) was predictor and breastfeeding > 3 months (p < 0.001- OR 0.06 CI 95% 0.03-0.14) was protective for acute pancreatitis.

Conclusion: Women without a history of biliary disorders and who breastfeed for at least 3 months have reduced risk to develop AP in the 2 years after delivery.

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# Role of breastfeeding in prevention of Gallstones (GS) related Acute Pancreatitis (AP) after Pregnancy (P)

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**Background:** Several epidemiological studies have showed that parity is related to GS, and this relationship is stronger in young mothers (1).

Biliary sludge (SL) and small GS may appear during P, most of SL and small GS spontaneously disappear during the first year after delivery, mainly in older pregnant (2, 3, 4).

Both SL and GS are associated with AP (5, 6), so a relationship between P and AP is likely to be found.

In a case control population-based study in the Olmsted County we have demonstrated that P is not related to AP, but biliary AP is more frequent in post-partum (P-P) (2 years) and it is more frequent in youngest women (7).

During P the increase in estrogen and progesterone may justify the extraordinary modification in biliary composition before and after delivery. In fact, the elevated estrogen

Increases cholesterol levels in gallbladder bile and elevated progesterone slow gallbladder motility: both mechanisms help in SL and GS precipitation. After delivery progesterone level collapses: SL and small GS may be ejected through common bile duct with chance of AP. Low estrogen, on the other hand, slow cholesterol level and may facilitate SL or GS spontaneous melting. Young age, in which P-P spontaneous disappearance of GS is uncommon and AP is more frequent seems to have a different hormonal nfluence: in fact, in young age ovulation after delivery is prompt to restart respect to older age: ovulatory cycles are associated with increase in estrogen and progesterone serum levels, not so elevated like P, but more than anovulatory cycle. If this speculation was confirmed, breast feeding (BF), that may block ovulatory cycle may work like old age and could reduce P-P AP.

#### Methods

- 1.We identified all hospital discharge records (HDR) of hospitalized Sicilian women of childbearing age (2011-18). nAP incidence, prognosis, and their relationship with age and GS were evaluated in P, in the 3 years in P-P and in non Pregnant (nP) women.
- 2. Within the cohort of childbearing age Sicilian women we conducted a population based case control study. We identified all women who delivered in 2013-18 and had AP within 2 years P-P. We reviewed their medical records, and for each case we matched 4 women of the same age (> 5 years), who delivered in the same day (> 30 days) in the same hospital without AP.

#### Results

A. In nP 1,564 of 7,236,863 women-years (21.61/100,000 person-years) developed AP. In P 34 of 226,492 women-years had AP (20.02/100,000 person-years). In P-P, In the first 6 months AP incidence had a peak of 95.4/100,000 person-years, it was significantly higher along 2 years. The increased incidence was limited to GS AP in youngest age

B. In the 74 women with AP and in 298 controls at univariate analysis, > 6 months oral contraception history (p < 0.001; OR 3.30; 95% CI 1.33-8.16), previous biliary disease (p < 0.001; OR 5.90; 95% CI 1.98-7.57) and smoking (p = 0.035; OR 2.04: 95%



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CI 1.04-4.0) were predictors of AP. Amenorrhea > 3 months (p < 0.001 OR 0.34; 95% CI 0.19-0.59) and BF > 3 months (p < 0.001 OR 0.07; 95% CI 0.03-0.14) were protective. At multivariate analysis, previous biliary disease p = 0.011; OR 5.49; 95% CI 1.48-20.38) and BF> = 3 months (p<0.001; OR 0.06 95% CI 0.03-0.14) were associated with AP.

**Conclusion:** GS AP incidence is increased in youngest women only in the first 2 years after delivery with a peak in the first 6 months. Wmen who breastfeed for at least 3 months and do not have a history of biliary disorders have reduced risk to develop AP in the first 2 years after delivery

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### Stent management of leaks after bariatric surgery: A systematic review and metaanalysis

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**Background:** Despite the low rates of complications of bariatric surgery, gastrointestinal leaks are major adverse events that increase post-operative morbidity and mortality. Endoscopic treatment using self-expanding stents has been used in the therapeutic management of these complications with preliminary good results. The aim of our study was to examine the safety and efficacy of the use of stents for the treatment of leakage after bariatric surgery.

**Methods:** We performed a systematic review and meta-analysis of self- expanding stents placement for the management of gastrointestinal leaks after obesity surgery. Overall proportion of successful leak closure, stent migration and reoperation were analysed as primary outcomes. Secondary outcomes were patients' clinical characteristics, duration and type of stent, other stent complications, and mortality.

**Results:** A meta- analysis of studies reporting stents (between 2005 and 2020) was performed, including 488 patients. The overall proportion of successful leak closure was 85.89 % (95% CI, 82.52- 89.25%), median interval between stent placement and its removal of 44 days. Stent migration was noted in 18.65 % (95% CI, 14.32-22.98%) and the overall proportion of reoperation was in 13.54 % (95% CI, 9.94-17.14%). The agreement between reviewers for the collected data gave a Cohen's □ value of 1.0. No deaths were caused directly by complications with the stent placement.

**Conclusion:** Self- expanding stents can be used for the management of gastrointestinal leaks after bariatric surgery with a high rate of effectiveness and a low mortality rates. Nevertheless, reintervention and stent migration represents a real problem with rates as high as 13.54% and 18.65 %, respectively. Therefore, more studies (probably, endoscopic combined methods) are still needed to establish a definitive basis for leak management after bariatric surgery and reduce migration rates.

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#### Eosinophilic gastroenteritis: A clinical endoscopic -pathology study

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**Background:** Eosinophilic esophagitis (EOE) is an uncommon disorder of the GI tract. It is important to consider it in differential diagnosis of abdominal pain, weight loss and diarrhea.

**Methods:** This reports studies clinical, endoscopic and pathological characteristics of 94 patients of biopsy proven EGE. Response to therapy with Ketotifen, Prednisolone or both was noted.

**Results:** Of the 94patients, (M=46; F=48) with biopsy proven EGE, 81% had abdominal pain, 44% weight loss and 52% had allergic symptoms. Peripheral eosinophilia was noted in 34% of patients. All patients were evaluated by upper endoscopy.

Gross endoscopic abnormalities were noted in 82% of the patients. Histologically, all patients had significant diffuse or focal infiltration of mucosa by eosinophils, with evidence of epithelial destruction. Patients were treated with Ketotifen (n=52) Prednisolone (n=3) or both drugs (n=25). The response rated was 80%, 100% and 93.7% respectively. Seasonal peak of the presentation was noted between March and April of each year.

**Conclusion:** EGE is not an uncommon disorder in the Arabian Gulf and endoscopic and histologic evaluation are indicated for patients who present with unexplained abdominal pain, weight loss and history of atopy.

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### Beware of lethal wernicke's encephalopathy after cytoreductive surgery with hipec for peritoneal pseudomyxoma: Case report of morbidity and mortality review

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Background: Pseudomyxoma peritonei (PMP) arising from the appendix is a rare entity. Complete cytoreductive surgery (CRS) combined with hyperthermic intraperitoneal chemotherapy (HIPEC) is the only established curative treatment, and is reputedly linked to high morbidity and mortality.

We report, to our knowledge, the first case of delayed lethal Wernicke encephalopathy (WE) complicating CRS with HIPEC for an appendicular PMP. WE, caused by a thiamine deficiency, is characterized by ataxia, nystagmus and changes in consciousness.

Methods: A patient underwent complete CRS with HIPEC for a low grade mucinous appendicular tumor at the stage of PMP with a peritoneal index of 31, and was readmitted at POD 36 for persistent vomiting and vague neurological symptoms of mental confusion. The classic triad of WE appeared tardily. Although thiamine substitution was promptly applied, the patient died at POD53.

Conclusion: WE is an uncommon and severe neurological disorder with a mortality rate up to 20 % and only 16 % of treated patients can fully recover. This diagnosis should always be anticipated in patients undergoing major surgery such as CRS-HIPEC. Efficient treatment should be quickly introduced in order to avoid a lethal outcome

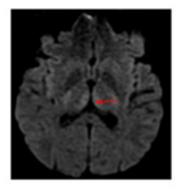


Figure 1: Cerebral MRI images showing hyperintense signal of the periaqueductal gray matter.

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