No. 0023 Targeted deletion of Slc26a9 attenuates the mucosal defense barrier in portal hypertensive gastropathy by enhancing endoplasmic reticulum stress-mediated mitochondria-dependent apoptosis signaling

Authors: ZHIQIANG YI[1], ZHIYUAN MA[1], ZILIN DENG[1], YINGYING ZHAO[1], HU WANG[2], BIGUANG TUO[1], TAOLANG LI[2], XUEMEI LIU[1]

Affiliations: *[1]Affiliated Hospital of Zunyi Medical University, [2]Department of General Surgery, Affiliated Hospital of Zunyi Medical University, Zunyi, China*

Aim: Endoplasmic reticulum stress-induced mitochondria-dependent mucosal apoptosis and impaired mucosal defense barriers have been shown to be fundamental pathological features of portal hypertensive gastropathy (PHG) (Yi et al., Biomedicine & Pharmacotherapy 2021). Slc26a9 is a member of Slc26a family with high expression in the stomach, which is a key regulator to maintain mucosal homeostasis. Loss of Slc26a9 caused gastric immune dysregulation and diffused mucosal injury (Liu et al., DDW 2019, 2020 and 2022). However, the role of Slc26a9 in PHG is never investigated. ***Methods:*** To identify whether Slc26a9 deficiency cause mucosal apoptosis and impairment of mucosal defense in PHG, gastric mucosal injury and apoptosis were studied in both PHG patients and PHG animal models by using parietal-specific Slc26a9 knockout (Slc26a9-KO) and Slc26a9 wild-type (Slc26a9-WT) mice. ***Results:*** Compared with sham-operated mice, the mucosa of portal vein ligated (PVL) mice had obvious normal structural damage, inflammatory cell infiltration, edema and vasodilation, and the tissue structural damage of Slc26a9 KO-PVL was more severe than that of Slc26a9 WT-PVL. This was followed by Slc26a9 downregulation in Slc26a9 WT-PVL and Slc26a9 KO-PVL mice. Furthermore, excessive gastric epithelial cells apoptosis was detected by Tunel staining in Slc26a9 KO-PVL mice, accompanied with upregulation of endoplasmic reticulum (ER) stress markers (Caspase12, eIFα-1, xBP-1), p53 upregulated apoptosis regulator (PUMA) and mitochondrial apoptosis markers (Bax, Bak, Cyt-c, Caspase 9, Caspase 3), when compared with Slc26a9 WT-PVL mice. These results suggest that deletion of Slc26a9 attenuates the mucosal defense barrier in PHG by enhancing mitochondria-dependent apoptotic signaling mediated by ER stress. Consistent with animal experiments, human PHG showed significantly reduced both Slc26a9 mRNA and protein expression when compared to healthy controls. ***Conclusion:*** Slc26a9 deficiency attenuates the mucosal defense barrier in PHG by enhancing ER stress-mediated mitochondria-dependent apoptosis signaling. Slc26a9 may be a novel therapeutic target for PHG.

Keywords: endoplasmic reticulum stress, mitochondria-dependent apoptotic, portal hypertensive gastropathy, Slc26a9

No. 0027 CHIA deficiency results in the development of gastric cancer via activation of STAT3 signaling pathway

Authors: YINGYING ZHAO[1], CHUNLI HU[1], ZHIYUAN MA[1], ZHIQIANG YI[1], ZILIN DENG[1], BIGUANG TUO[1], TAOLANG LI[2], XUEMEI LIU[1]

Affiliations: *Departments of [1]Gastroenterology, Digestive Disease Hospital, [2]General Surgery, Affiliated Hospital of Zunyi Medical University, China*

Aim: Acidic mammalian chitinase (CHIA) belongs to the 18 glycosidase family and is expressed in epithelial cells in various organ. In the stomach, CHIA is highly expressed in the chief cells, and previous study showed that down-regulation of CHIA was associated with chronic atrophic gastritis. However, what's the expression and function of CHIA in the gastric cancer is unknown. The present study was therefore undertaken to study a potential role of CHIA in the onset of GC. ***Methods:*** Gene chip analysis as well as histopathological and immunohistochemical (IHC) analysis were performed in CHIA knockout and wildtype mice at different age. CHIA mRNA and protein expression were measured by qPCR and Western blot in human normal gastric epithelium, CAG and gastric cancer tissues as well as different cell lines. The cell functional experiments were performed to test the role of CHIA in gastric cancer cell lines. ***Results:*** With advanced of age, CHIA deficient mice exhibited severe gastric pre neoplastic phenotype including oxyntic atrophy followed with chronic inflammation, TFF2-expressing (SPEM) and intestinal metaplasia, high-grade intraepithelial neoplasia, ultimately gastric cancer. Accompanied by upregulation of a series of inflammatory factors, including IL33, IL25, IL-6, IL-13 and IL17, as well as apoptotic proteins, including BCL-2, BCL-xl, CyclinD1 via activation of STAT3 signaling pathway, when compared with wildtype mice. Consistent with animal experiment, human CAG and gastric carcinoma tissues displayed significantly decreased of CHIA mRNA and protein expression when compared with healthy control. Moreover, IHC analysis of human normal gastric epithelial ($n = 80$), CAG ($n = 63$), and gastric cancer ($n = 93$) indicated progressive decrease in CHIA expression, demonstrating that loss of CHIA expression is a key event of normal gastric epithelial progressing to CAG and malignant pathological process. ***Conclusions:*** CHIA deficiency caused the development gastric cancer via activation of STAT3 signaling pathway. CHIA may be a novel therapeutic target for gastric cancer.

Keywords: acidic mammalian chitinase GC STAT3

No. 0029 Clinical trial study on minimally invasive treatment of internal hemorrhoids under endoscope by disposable electronic gastroscope

Authors: RUI ZHU, QIU ZHAO

Affiliation: *169 Donghu Road, Wuchang District, Wuhan City, Hubei Province*

Background: Hemorrhoids are venous masses formed by the enlarged varicose vein plexus under the skin of the rectal mucosa and anal canal. In order to solve the hidden danger of cross infection in patients, HuiZhou Xzing Technology Co., Ltd. developed a disposable electronic gastroscope. ***Objectives:*** To evaluate the availability and safety of disposable electronic gastroscope in endoscopic treatment of internal hemorrhoids. ***Methods:*** This study was conducted in a randomized, open and controlled study, with subjects randomly assigned to the experimental group (disposable electronic gastroscopy) and the control group (Olympus GIF-HQ290 gastroscopy). The feasibility, operational performance and safety of disposable gastroscopy in endoscopic treatment of internal hemorrhoids were evaluated comprehensively according to the therapeutic effect, postoperative perianal pain, bleeding, perianal edema, incidence of perianal pendulous distension, evaluation of clinical experience, device failure/defect, and device-related adverse events. Twenty patients were recruited for this clinical trial. ***Results:*** The total effective rate of endoscopic treatment was 100% in both groups. There was no significant difference in the incidence of postoperative perianal pain (10% *vs* 20%), perianal edema (20% *vs* 10%), and perianal collapse (30% *vs* 20%). No postoperative bleeding occurred in both groups after endoscopic treatment. There were significant differences between the experimental group and the control group in clinical performance evaluation (flexibility, assistive function, therapeutic operation) (4.00 ± 0.94 *vs* 6.00 ± 0.00, 4.40 ± 1.51 *vs* 5.90 ± 0.32, 4.80 ± 1.32 *vs* 5.90 ± 0.32), Statistical significance ($P = 0.00$, 0.006, 0.019). There was no significant difference between image conditions and brightness, contrast and sharpness (3.50 ± 1.08 *vs* 3.90 ± 0.32, 3.50 ± 1.08 *vs* 4.00 ± 0.00, $P > 0.05$). There were no device-related adverse events, device failure/defects in the experimental group and the

control group. ***Conclusion:*** Disposable electronic gastroscope is safe and feasible for minimally invasive treatment of internal hemorrhoids under endoscope. Although its operation performance is slightly inferior to that of traditional Olympus endoscope, its image acquisition quality is good, and the effect is comparable to that of Olympus GIF-HQ290 gastroscope.
Keywords: disposable electronic gastroscope, internal hemorrhoids, herapeutic effect

No. 0030 Silencing of lncRNA ZFAS1 on malignancies in gastric cancer cells through Wnt/β-catenin signaling study

Authors: FAN ZHANG, WEIRAN XU, LIANG HE, YING LI
Affiliation: *First Hospital of Jilin University*

Gastric cancer is a common malignancy with high mortality. Long noncoding RNA (lncRNA) zinc finger antisense (ZFAS)1 is upregulated in gastric cancer specimens compared with the para-carcinoma tissues. The silencing of ZFAS1 inhibited the growth, proliferation, cell cycle progress, migration, invasion and epithelial-mesenchymal transition (EMT), and enhanced the sensitivity to cis-platinum or paclitaxel in SGC7901 cells, as evidenced by the expression changes of proliferating cell nuclear antigen, Cyclin D1, Cyclin E, Cyclin B1, E-cadherin, N-cadherin, vimentin, matrix metalloproteinase (MMP)-2 and MMP-14. The ZFAS1 also activated the Wnt/β_x0002_catenin signaling. Subsequently, the ZFAS1 knockdown-induced the inhibition of migration, invasion, EMT and resistance to chemotherapeutic reagens was reversed by the overexpression of β-catenin. In summary, the silencing of ZFAS1 inhibited the growth, proliferation, cell cycle progress, migration, invasion, EMT and chemotherapeutic tolerance by blocking the Wnt/β_x0002_catenin signaling in gastric cancer cells.
Keywords: EMT, gastric cancer, lncRNA

No. 0032 m5C and m6A modification of long noncoding NKILA accelerates cholangiocarcinoma progression via miR-582-3p-YAP1 axis

Authors: HAIMING ZHENG[1], MEIYING ZHU[1], WENHUA LI[2], ZUNQIANG ZHOU[1], XINJIAN WAN[1]
Affiliations: *[1]Shanghai Jiao Tong University Affiliated Sixth People's Hospital, [2]Jiading Branch of Shanghai General Hospital, Shanghai JiaoTong University School of Medicine*

Cholangiocarcinoma (CCA) is a severe malignancy originating from the bile duct and the second most common primary liver cancer. NF-kappa B interacting lncRNA (NKILA) is functional lncRNA, which play important roles in human cancers. However, the role and underlying mechanism of NKILA in CCA remains largely unknown. Here, our study demonstrated that NKILA was significantly upregulated in CCA tissues and cells. Overexpression of NKILA associated with advanced TNM stage, lymph node and distant metastasis, and also indicated poor prognosis in CCA patients. Functionally, NKILA facilitated CCA growth and metastasis in vitro and in vivo. The 5- methylcytosine (m5 C) methyltransferase NSUN2 interacts with NKILA, increasing its m5C level and promoting its interaction with YBX1. Moreover, NKILA physically interacted with and suppressed miR-582-3p, which was regulated by METTL3- mediated N6-methyladenosine (m6 A) modification. Finally, we showed that YAP1 a target of NKILA via miR-582-3p and NKILA functioned partially via YAP1 in CCA. Taken together, our findings indicate a novel regulatory mechanism of NKILA for promoting CCA progression and that NKILA may be a promising target for CCA treatment.
Keywords: ceRNA, METTL3, NSUN2, RNA methylation, YAP1

No. 0034 Comparison of the Rockall score and revised-Rockall score for nonvariceal upper gastrointestinal bleeding

Authors: YAN-YAN ZHANG[1], QIAO-XIAN ZHANG[2], TING-TING LIAN[3], JIA-YUAN ZHUANG[1], ZE-HAO ZHUANG[3]
Affiliations: *[1]Fujian Medical University, [2]Department of Nursing, The First Affiliated Hospital of Fujian Medical University, [3]Department of Endoscopy, The First Affiliated Hospital of Fujian Medical University*

Background and Aims: Several scoring systems have been developed to predict adverse events in patients with nonvariceal upper gastrointestinal bleeding (UGIB). The Rockall score (RS) is frequently used. However, its content for assessing the endoscopic lesions no longer reflects the current level of endoscopic intervention exactly. Its accuracy in predicting the risk of rebleeding and death also needs to be re-evaluated. Thus, we aimed to revise the Rockall score (RS) to establish a novel prediction score (revised RS [RRS]) that incorporates an assessment of endoscopic treatment results. We also aimed to analyze the discriminative ability of the RRS for 30-day rebleeding and mortality after endoscopic treatment in patients with nonvariceal upper gastrointestinal bleeding (NVUGIB). ***Methods:*** This retrospective study was conducted between January 2016 and October 2021. Eligible participants were those diagnosed with NVUGIB presenting at the First Affiliated Hospital of Fujian Medical University. The outcome variables were 30-day rebleeding and mortality, whereas the explanatory variables were the RS and RRS. The receiver operating characteristic (ROC) curve and area under the ROC curve (AUROC) were computed to compare their discriminative abilities. ***Results:*** A total of 450 patients were enrolled in this study. The 30-day rebleeding and mortality rates were 10.2% (46/450) and 1.1% (5/450), respectively, for the entire group. The rate of rebleeding and/or mortality was 10.9% (49/450). The RRS achieved a higher AUROC for predicting rebleeding (AUROC: RS, 0.59; RRS, 0.72; $P < 0.0001$), mortality (AUROC: RS, 0.82; RRS, 0.92; $P = 0.0003$), and rebleeding and/or mortality (AUROC: RS, 0.60; RRS, 0.73; $P < 0.0001$) after endoscopic therapy, compared to the RS. ***Conclusion:*** Compared to the RS, the RRS had a significantly higher discriminative ability in predicting the risk of rebleeding and mortality in patients with NVUGIB (Trial registration number: ChiCTR2100051978).
Keywords: mortality, nonvariceal upper gastrointestinal bleeding, rebleeding, risk stratification, Rockall scoring system

No. 0037 Gastric adenocarcinoma of the fundic gland type: Clinical endoscopy and clinicopathologic alsnalysis

Authors: LI LI, YANG WEIWEN, ZHANG SHIRONG
Affiliation: *Guiyang Second People's Hospital*

Objective: To explore Clinical endoscopy and clinicopathologic of Gastric adenocarcinoma of the fundic gland type (GA-FG). ***Methods:*** The 13 cases GA-FG patients diagnosed from 2017 to 2019, 5 males and 8 females, average age of 55 years, clinical manifestations of abdominal discomfort and gastric fundus lesions, 1 case of previous "cardia ulcer," 1 case of "esophageal mass," 1 case of elevated CEA, and no family history of gastric cancer. In all the above cases, gastroscopy with ESD/EMR and pathological biopsy, and immunohistochemical staining. Endoscopic evaluation. The endoscopic morphology of the tumors was evaluated according to the Paris classification criteria. Pathological evaluation was judged by HE tissue sections based on the GA-FG histological characteristics of digestive system tumors. ***Results:*** Twelve of the 13 patients were solitary, seven gastric fundus, four gastric bodies, one at the junction of gastric fundus and gastric bodies, one case stomach bottom multiple, ranging between 0.3 × 0.3 cm and 1.5 × 1.5 cm. The Paris classification was 0-I1 case, 0-IIa 10 case,