FBG (* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$)) (IDDF2021-ABS-0205 Figure 1f. Akkermansia viable improved liver steatosis; serum levels of HOMA-IR (** $P < 0.01$, *** $P < 0.001$)). The α diversity of intestinal microflora in HFD group was lower than that in CD group. Compared with HFD group, The α diversity of intestinal microflora in HFD+LAKK group and HFD+ Supernatant group were increased (IDDF2021-ABS-0205 Figure 1g. Akkermansia viable improved liver steatosis; Alpha diversity). PCoA analysis showed that there were differences among groups (IDDF2021-ABS-0205 Figure 1h. Akkermansia viable improved liver steatosis; PCoA analyses). Compared with CD group, the F/B ratio increased was increased in HFD group but decreased in HFD+LAKK group and the HFD+ Supernatant group (IDDF2021-ABS-0205 Figure 1i. Akkermansia viable improved liver steatosis; Phylum level of gut microbiota composition). The bacteria abundance of HFD group and HFD+ PAKK group was similar. HFD +LAKK group and HFD+ Supernatant group had similar bacteria abundances, such as the increasing of Akkermansia, Alloprevotella, and Roseburia (IDDF2021-ABS-0205 Figure 1j. Akkermansia viable improved liver steatosis; Bacterial heatmap at genus level. CD, control diet; HFD, high-fat diet; LAKK, Akkermansia viable; PAKK, pasteurized Akkermansia).

Conclusions Akkermansia viable, pasteurized Akkermansia and supernatant improve glucose metabolism and insulin resistance, whereas Akkermansia viable and supernatant improve gut microbiota. Only Akkermansia viable can improve liver steatosis and lipid metabolism. Akkermansia viable effectively increases probiotics.

Chuangyu Cao and Diwen Shou contributed equally to this work.

Clinical Gastroenterology

IDDF2021-ABS-0033 PROTECTIVE EFFECTS OF FEMALE REPRODUCTIVE FACTORS ON GASTRIC SIGNET RING CELL CARCINOMA

Yang Li*. National Cancer Center/National Clinical Research Center for Cancer/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, China

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Background The overall incidence of gastric cancer is higher in males than in females worldwide. However, gastric signet ring cell carcinoma (GSRC) is more frequently observed in younger female patients. Limited studies focused on sex-specific differences in GSRC have been reported. Gastric cancer shows a male predominance that might be explained by protective effects from estrogens in females. The aim of this study was to analyze clinicopathological differences between sex groups to reveal sex disparities in GSRC.

Methods We reviewed medical records for and surveying reproductive factors, to 1,431 patients who get treatment for GSRC at Cancer Hospital, Chinese Academy of Medical Sciences from January 2011 to December 2018. Clinicopathological characteristics were compared between females and males. The mortality risks of GSRC were compared between males and females' subgroups, consist of premenopausal women, and postmenopausal women.

Results Of 1,431 patients, 935 and 496 patients were divided into male and female groups separately. Further, the female group was divided into menstrual female group (181 patients)

Abstract IDDF2021-ABS-0033 Figure 1

and menopausal female group (315 patients). 5-year OS was observed for male, menstrual female group and menopausal female group (65.6% vs. 76.5% vs. 65%, $P < 0.01$, separately). In the multivariate analysis, lower BMI (HR= 1.24, 95% CI:1.02, 1.51), neoadjuvant chemotherapy (HR=2.34, 95% CI:1.79, 3.04), lymphovascular invasion (HR=1.39, 95% CI:1.02, 1.90) were recognized as risk factors. The menstrual female was found as a protective factor (HR=0.58, 95% CI: 0.42,0.82).(IDDF2021-ABS-0033 Figure 1. Overall survival among male, menstrual female and menopausal female groups)

Conclusions Female patients of GSRC were younger than males at diagnosis. The mortality risks of premenopausal female patients are much lower than males. The contribution of this study has been to confirm that the female reproductive factors may provide protective effects in GSRC patients. It would be interesting to assess the effects of female reproductive factors to investigate a new treatment for a group of selected GSRC patients.

IDDF2021-ABS-0122 NO ASSOCIATION BETWEEN PROTON-PUMP INHIBITOR USE AND ADVERSE CLINICAL OUTCOMES OF COVID-19: A TERRITORY-WIDE COHORT STUDY OF 8,675 PATIENTS

¹Terry Cheuk-Fung Yip*, ¹Francis Ka-Leung Chan, ²Grace Chung-Yan Lui, ¹Vincent Wai-Sun Wong, ³Henry Lik-Yuen Chan, ¹Sunny Hei-Wong, ¹Joyce Wing-Yan Mak, ¹Siew-Chien Ng, ¹David Shu-Cheong Hui, ¹Grace Lai-Hung Wong. ¹Department of Medicine and Therapeutics, Medical Data Analytics Centre (MDAC), Institute of Digestive Disease, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong; ²Department of Medicine and Therapeutics, Medical Data Analytics Centre (MDAC), Stanley Ho Centre for Emerging Infectious Diseases, Jockey Club School of Public Health and Primary Care, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong; ³Medical Data Analytics Centre (MDAC), Faculty of Medicine, The Chinese University of Hong Kong; Department of Internal Medicine, Union Hospital, Hong Kong

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Background Evidence regarding the use of proton-pump inhibitors (PPIs) in COVID-19 patients remains elusive. We examined the impact of PPI use on clinical outcomes of COVID-19 patients in a territory-wide cohort.

Methods We performed a retrospective cohort study using data from an electronic healthcare database managed by the Hospital Authority, Hong Kong. COVID-19 patients diagnosed virologically between 23 January 2020 and 1 January

2021 in Hong Kong were identified. The primary endpoint was a composite of intensive care unit admission, use of invasive mechanical ventilation, and/or death. PPI user was identified by PPI use within 12 months before the diagnosis of COVID-19. In subgroup analysis, current PPI users were defined as patients who used PPIs within 1 month before the diagnosis of COVID-19; past PPI users were defined as patients who used PPIs 1 to 12 months before COVID-19 diagnosis. We performed sensitivity analysis after excluding patients with short-term new NSAID use within 1 month before COVID-19 diagnosis to minimize reverse causation bias.

Results We identified 8,675 COVID-19 patients (mean age 46 years, 49% male, 97.6% of all the reported cases in Hong Kong); 579 (6.7%) patients had used PPI. PPI users were older, more likely to have comorbidities, concomitant medications and unfavorable laboratory parameters than non-users. Of 8,675 COVID-19 patients, 500 (5.8%) developed the primary endpoint. After propensity score (PS) balancing for patients' demographics, comorbidities, laboratory parameters, and use of medications, PPI use was not associated with the development of primary endpoint in PS weighting (weighted hazard ratio [HR] 1.11, 95% confidence interval [CI] 0.83–1.47, $P=0.482$) (IDDF2021-ABS-0122 Figure 1. Cumulative incidence of primary endpoint (a composite endpoint of intensive care unit [ICU] admission, use of invasive mechanical ventilation [IMV], and death) in COVID-19 patients who were and were not proton-pump inhibitor (PPI) users after propensity score (PS) weighting in a single multiple imputation data set.), and PS matching analysis (weighted HR 0.81, 95%CI 0.57–1.14, $P=0.228$) (IDDF2021-ABS-0122 Figure 2. Cumulative incidence of primary endpoint (a composite endpoint of intensive care unit [ICU] admission, use of invasive mechanical ventilation [IMV], and death) in COVID-19 patients who were and were not proton-pump inhibitor (PPI) users after propensity score (PS) matching in a single multiple imputation data set). Consistent non-association was observed after

Abstract IDDF2021-ABS-0122 Figure 2

multivariable adjustment (adjusted HR 0.84, 95%CI 0.66–1.07, $P=0.151$), in subgroups of current and past PPI users, and in sensitivity analysis after excluding short-term new NSAID users.

Conclusions PPI use is not associated with adverse clinical outcomes in COVID-19 patients. The result remains robust after PS weighting, PS matching, multivariable adjustment, and subgroup analyses.

Clinical Hepatology

IDDF2021-ABS-0046

METABOLIC DYSFUNCTION-ASSOCIATED FATTY LIVER DISEASE INCREASES COLON CANCER RISK: A NATIONWIDE COHORT STUDY

Hye Won Lee*, Seung Up Kim. Yonsei University College of Medicine, Korea, South

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Background The association between nonalcoholic fatty liver disease (NAFLD) and colorectal cancer (CRC) has been controversial. Using the new consensus-driven definition, we evaluated the association of metabolic dysfunction-associated fatty liver disease (MAFLD) with the risk of developing CRC.

Methods From a nationwide health screening database, we included 8,933,017 participants (48.6% male) aged 40–64 years between 2009 and 2010. Participants were categorised by the presence of fatty liver disease (FLD)—NAFLD and MAFLD, separately—and by the combination of the two definitions: Neither-FLD, NAFLD-only, MAFLD-only, or Both-FLD. The primary outcome was the development of CRC.

Results Among the participants, 2,517,330 (28.2%) had NAFLD and 3,337,122 (37.4%) had MAFLD, while 2,465,151 (27.6%) met both NAFLD and MAFLD definitions. Over a median follow-up period of 10.1 years, 60,888 new

Abstract IDDF2021-ABS-0122 Figure 1