Effects of a mixture of the seed of Syzygium jambolana, fruits of Momordica charantia and leaves of Azadirachta indica paste on loperamide-induced constipation in rats

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Background Constipation is one of the most common gastrointestinal complaints worldwide. Irritable bowel syndrome (IBS) is the most prevalent functional gastrointestinal disorders (FGIDs) that affects different aspects of life and patients experienced depression and anxiety more than others. The aim of this study is to evaluate the effects of a mixture of the seed of Syzygium jambolana, fruits of Momordica charantia and leaves of Azadirachta indica paste for the treatment of loperamide-induced constipation in a rat model.

Methods Animals were divided into one normal control group and three experimental groups (10, 20 and 30 g/kg). Loperamide (2 mg/kg, twice per day) was injected intraperitoneally to induce constipation in the three experimental groups. Each group of rats was given orally a dose of granules containing (10, 20 and 30 g/kg) concentrated ethanolic extract of a combined mixture paste from all three folk plants. Mixture paste was administered for 30 days to assess its anti-constipation effects.

Results Fecal pellet number, weight, and water content were increased in the plant mixture paste-treated groups as compared to the control group. Reductions in body weight and increased intestinal transit length were observed in the plant mixture paste-treated groups. Fecal pellet number was reduced in the distal colons of the plant mixture paste-treated rats. Exercise and ileum tension increased in the experimental groups as compared to the control group. According to histological analyses, the thickness of the distal colon and areas of crypt epithelial cells that produce mucin were increased in the treatment groups in a dose-dependent manner.

Conclusions Constipation was decreased when combined plant mixture paste was fed to rats. Specifically, fecal number, weight, and water content, as well as histological parameters such as thickness and mucin areas in the distal colon were improved. A mixture of Syzygium jambolana, Momordica charantia and Azadirachta indica is effective in eliminating IBS symptoms, and it is a related useful therapeutic and preventive strategy for chronic constipation.

Patterns of usage of sugar-sweetened beverages (SSBs) and the associated behaviors with expenditure incurred among persons visiting the general outpatient department of a tertiary care hospital

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Background The burden of non-communicable diseases in India has already reached epidemic proportions. Sugar-sweetened beverages (SSBs) are implicated in causing obesity, diabetes and cardiovascular diseases. There is a lack of data from India regarding how frequently and how much sugary drinks are consumed, in what forms, what are the associated behaviors and expenditures incurred due to consumption of SSBs.

To document the prevalence and patterns of usage of SSBs, associated behaviors and expenditure incurred among persons visiting the general outpatient department of a tertiary care hospital.

Methods This was a cross-sectional study conducted in a public tertiary care hospital located in Bhopal in central India, between May and September 2018. Patients and accompanying persons attending the general out-patient department and who were ≥ 15 years of age were included. Patients who are severely ill were excluded. Convenience sampling was used to select participants. Exit interviews using a semi-structured interview schedule were conducted with subjects giving informed consent and after patients had completed the physician consultation.
SUPPRESSION OF FUMARATE HYDRATASE ACTIVITY INCREASES THE EFFICACY OF CISPLATIN-MEDIATED CHEMOTHERAPY IN GASTRIC CANCER

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Background Gastric cancer (GC) is one of the most common malignancies worldwide. Due to the low rate of early detection, most GC patients were diagnosed at advanced stages and had a poor response to chemotherapy. Some studies found that Fumarate hydratase (FH) participated in the DNA damage response and its deficiency was associated with tumorigenesis in some cancers. In this study, we investigated the relationship between FH and cisplatin (CDDP) sensitivity in GC cell lines.

Methods We examined the role of FH for CDDP sensitivity in GC cells. Immunoblotting, qPCR, MTS were used to verify the relationship between FH expression and CDDP sensitivity. GC cells with FH knockdown were treated by CDDP and the apoptotic indexes were measured. Then we used FH inhibitor-Miconazole Nitrate (MN) to study the role of FH on GC cell death induced by CDDP. CDDP-induced apoptosis was quantified by immunoblotting and flow cytometric analysis. The role of FH on CDDP-induced DNA damage was evaluated using electrophoresis, comet assay and immunofluorescence. The synergistic effect of MN with CDDP on GC was measured on GC cells, cell line-derived xenografts, and patient-derived xenograft (PDX) model.

Results We found that FH was the most significant gene which induced by CDDP treatment and the suppression of FH could enhance the cytotoxicity of CDDP. MN could inhibit FH activity and enhance the effect of CDDP in vitro and in vivo. We also investigated the significance of expression of FH in GC tissues. The FH expression, which was higher in GC tissues than in noncancerous tissues, was negatively associated with the prognosis of patients.

Conclusions In summary, we demonstrated that FH is a reliable indicator for response to CDDP treatment in GC and the inhibition of FH may be a potential strategy to improve the effects of CDDP-based chemotherapy.