Toxicity test of emodin in ICR mice

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Background/Aims: The application of radiotherapy of hepatocellular carcinoma (HCC) is limited due to radioresistance in tumor and radiotoxicity in nontumorous liver. Therefore, study for radioresistance mechanism and improvement of killing effect of irradiation by therapeutic insult such as radiosensitizer etc. Emodin (1,3,8-trihydroxy-6-methylanthraquinone), a family of plant derived polyphenolhas been proven to have anticancer properities. We performed *in vivo* study using BALBc/nude mice to prove the effect of emodin as radiosensitizer last year. Therefore we performed toxicity study of emodin in the view of new drug development.

Methods: ICR mice was used in this study. Mice were treated with five different manners; none (control), 5mg/kg, 50mg/kg, 100mg/kg, 250mg/kg of emodin. Emodin was administered only one time and we investigated body weight, activity, food intake of mice and harvested them within one month. Then we measured organ weight & gross morphology

Results: No systemic toxicity of emodin was found in ICR mice (Figure 1, 2), but hematologic toxicity as subtle anemia and thrombocytopenia was suspcious in 250mg/kg injected group.

Conclusions: Therefore, our findings may provide that emodin can be developed as new tolerable radiosensitizer in HCC and may aid in the design of new therapeutic strategies for the radioresistant HCC.

Recent Publications:

1. Hwang SY, Cho M et al. Effectiveness and complications of combination therapy with interferon alpha and ribavirin in patients with chronic hepatitis C. Korean J Gastroenterol. 2007 Mar;49(3):166-72.
2. Hwang SY, Roh YH et al. Extramedullary plasmacytoma of the pancreas diagnosed using endoscopic ultrasonography-guided fine needle aspiration. Clin Endosc. 2014 Jan;47(1):115-8.
3. Hwang SY, Lee JH et al. Spontaneous fungal peritonitis: a severe complication in patients with advanced liver cirrhosis. Eur J Clin Microbiol Infect Dis. 2014 Feb;33(2):259-64.
4. Hwang SY, Yang KM et al. Emodin attenuates radioresistance induced by hypoxia in HepG2 cells via the enhancement of PARP1 cleavage and inhibition of JMJD2B. Oncol Rep. 2015 Apr;33(4):1691-8.
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9. Lee JH, Hwang SY, Kim YJ et al. Long-term Prognosis of Combined Hepatocellular and Cholangiocarcinoma After Curative Resection Comparison With Hepatocellular Carcinoma and Cholangiocarcinoma. J Clin Gastroenterol 2011 Jan;45(1):69-75.

Biography

Education: 2001 graduated from Pusan National University (PNU), School of Medicine, Korea
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2015 Doctor of Philosophy in Medicine in PNU, School of Medicine, Korea

Postgraduate training and fellowship appointments:
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