PD11: Preliminary Effects of Oleuropein on the Two-Stage Skin Carcinogenesis Model

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ABSTRACT

Introduction: Oleuropein is a phenylethanoid, a form of phenolic compound which can be majorly found in olive leaves. Previous studies have shown several pharmacological activities of oleuropein against different cancer cell lines. **Method:** In this study, we further investigated the effect of oleuropein on the tumour development by using the two-stage skin carcinogenesis mouse model. 18 female ICR mice were randomly divided into 3 groups (n=6 per group); group I was pre-treated with oleuropein (10mg/kg) before DMBA/TPA, group II as a positive control (DMBA/TPA), and group III as a negative control (70% acetone). All animals were killed at the week 10. **Results:** Pretreatment with oleuropein before DMBA/TPA has resulted in a reduction of epidermal hyperplasia as compared to thick hyperplasia observed in the control positive group through the histology analysis. Moreover, several apoptotic cells were expressed on the oleuropein-pretreated group whilst none was observed on both control groups. Thus, this may suggest the selective role of oleuropein in the apoptotic activity. On the other hand, the level of malondialdehyde (MDA) was significantly decreased, whilst the level of superoxide dismutase (SOD) was significantly increased in the oleuropein-pretreated group at the week 10. **Conclusion:** The preliminary results indicated that oleuropein may act as a potent chemopreventive agent against the development of mouse skin carcinogenesis through its apoptotic and anti-oxidant actions.

KEY WORDS:

Oleuropein; carcinogenesis; cancer; skin; antioxidant

PD12: Enhancement of Different Types and Concentrations of Pineapple Juices in 1.5T Magnetic Resonance Imaging (MRI)

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ABSTRACT

Introduction: Ananas comosus (pineapple) has been believed to have a capability to become an alternative oral contrast agent due to a high content of paramagnetic component which is manganese. **Method:** An experiment was done in order to study the magnetization properties of pineapple. Nine bottles were filled with 150mL of different types and concentrations of pineapple juices. All these bottles were then immersed in a water container. Abdominal coil was used to acquire the magnetic resonance imaging (MRI) of T1-weighted (T1W) and T2-weighted (T2W) images. Images were displayed in coronal section for measuring their signal intensity based on signal-to-noise ratio (SNR). Then the SNR of each juice was correlated with its image quality on T1W and T2W images. **Results:** For T1W images, there were statistically significant differences in SNRs between types and concentrations of pineapple (p value=0.006; p value =0.01). While for T2W images, a statistically significant difference was only found between SNR and concentrations of pineapple (p value=0.014). Pearson correlation value between SNR and image quality was 0.977 for T1W images, whereas for T2W images it was -0.868. **Conclusion:** The outcomes of this study indicate that pineapple has a strong enhancement value on T1W and T2W images. Indeed, the Josapine type of pineapple at 100% concentration was found to be the best contrast agent among those studied samples. Therefore, pineapple is suitable to be used as an alternative oral contrast agent for MRI scans.

KEY WORDS:

MRI, alternative oral contrast agent, pineapple, SNR, image quality