

P16

The Role of UV exposure and novel compounds on the immunogenicity and genotoxicity of skin cancer

Ayesha Masood¹, Nader Ghaderi², Shohreh Jaferinejad¹, Diana Anderson¹,
Andrew Wright², Sobia Kauser¹, Mojgan Najafzadeh¹

¹*School of Life Sciences, University of Bradford, Bradford, UK*

²*Bradford Teaching Hospitals NHS foundation trust, St Luke's Hospital, Bradford, UK*
A.Masood11@bradford.ac.uk

In the UK, melanoma is the 5th most common cancer. The treatment of melanoma is a challenge for clinicians because of its aggressive behaviour and metastatic status. In the last 20 years, Retinoid therapy has produced remarkable results in the treatment of malignant melanoma. The published data suggested that several gene signalling pathways are involved in the mechanism of action of Retinoic acid as an anti-cancer drug.

Retinoids have been used to treat lots of different diseases including breast cancer, colorectal cancer and melanoma. Meanwhile, as retinoids act as an anti-cancer agent for different cancers. So, the aim of the study is to investigate Retinoic acid (RA), as a potential novel agent for the treatment of melanoma. The objective is to investigate the effects of RA on the lymphocytes of healthy individuals and melanoma patients' lymphocytes and to detect anti-cancer activity of RA on two melanoma cell lines FM55 and CHL-1 as compared to untreated cells using the Comet assay. The H₂O₂ and ultraviolet A+B (PUVA light) (315-350nm) were used to cause oxidative stress. A concentration of RA 20µg/ml and 30µg/ml were used to treat the lymphocytes in the comet assays.

The lymphocytes from melanoma patients showed increased DNA damage as compared to healthy individuals (*p<0.05). There was no damage observed in healthy lymphocytes, but it produced significant (**p<0.001) reduction in the DNA damage of Melanoma lymphocytes in the Comet assay. Moreover, The RA 20µg/ml significantly decreased the oxidative stress caused by hydrogen peroxide and UVA+B rays. Hence, RA is effective in both groups using the Comet assay. Immunocytochemistry was used to visualize the expression of P53, Ki-67 and S100 proteins. Immunocytochemistry results demonstrated that the expression of protein P53 is nuclear in CHL-1 cells and cytoplasmic in FM55 cells. It also suggested that the expression of protein ki67 in CHL-1 and FM55 is nuclear and the expression of protein S100 is absent in both cell lines.

Keywords:

Melanoma, Retinoic Acid, Comet Assay, Immunocytochemistry, UVA.