

## 5<sup>th</sup> World Congress on **Cancer Therapy**

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### **Effect of dietary fatty acids on development of carcinogen-induced breast cancer in female fisher (F344) rats**

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**Background and objectives:** Objective of our study was to assess effect of dietary fatty acids (saturated vs unsaturated fatty acids vs trans fats) in development of Dimethylbenzanthracene (DMBA) induced experimental mammary tumours in female fisher rats.

**Methodology:** Eighty weanling female fisher (F344) rats were divided into five groups of 16 each and fed with synthetic diets containing partially-hydrogenated vegetable oil / PHVO (trans fat), palmolein (saturated fatty acids), sunflower oil (n-6 PUFA), soyabean oil ( $\alpha$ -linoleic acid) and sunflower + fish oil (LC n-3 PUFA) for 4 months after which 8 rats from each group were administered DMBA orally, once a week, for 4 weeks and continued on same diet for 8 months, while remaining 8 rats of each group were continued on respective diets.

**Results:** Total serum SFA level was not affected by type of dietary fat, total MUFA level was highest in PHVO group, LC n-6 PUFA levels were not significantly different among groups and total LC n-3 PUFA levels were highest in sunflower oil + fish oil group. Number of tumours were least in PHVO and highest in n-6 PUFA group. Adenocarcinoma was observed as predominant tumour type and metastatic tumours, least common type, noted only in SFA diet group. Estrogen receptor positivity was mostly seen in n-3 PUFA group, progesterone receptor positivity in sunflower oil + fish oil group while PHVO group showed highest aromatase positivity.

**Conclusion:** Dietary fatty acid composition to some extent reflected in plasma phospholipid fatty acid composition. Trans fats caused development of mammary tumours. N-3 PUFAs were associated with low and n-6 PUFAs with high tumour development.

#### **Biography**

Surekha M V has completed her MBBS and MD (Pathology) from Sambalpur University, Odisha, India in the year 2002 and since then she has worked as a Consultant Pathologist in Global Hospitals, Hyderabad from 2004 to 2008. Since 2008 she is working as Scientist in National Institute of Nutrition (ICMR), Hyderabad. She has about 10 publications to her credit. She is a member of Medical Council of India (MCI), Andhra Pradesh Medical Council, Nutrition Society of India and Indian Association of Pathologists and Microbiologists.

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