

# European Respiratory Society Annual Congress 2012

**Abstract Number:** 3620

**Publication Number:** P4223

**Abstract Group:** 11.1. Lung Cancer

**Keyword 1:** Lung cancer / Oncology **Keyword 2:** Smoking **Keyword 3:** No keyword

**Title:** Genetic polymorphisms of k-ras gene in smoking related diseases

Dr. Radwa 20974 El-hefny radwaelhefny@hotmail.com MD , Prof. Dr Alaa 20975 Shalaby aoshalaby@hotmail.com MD , Prof. Dr Olfat 20976 Shaker olfatshaker@yahoo.com MD , Prof. Dr Yousri 20977 Akl yousriakl@yahoo.com MD , Dr. Ahmed 20978 Al-halfawy ahalfawy@hotmail.com MD and Dr. Assem 20981 Elessawy aelessawy@hotmail.com MD . <sup>1</sup> Chest Diseases, Faculty of Medicine-Fayoum University, Fayoum, Egypt ; <sup>2</sup> Chest Diseases, Faculty of Medicine-Cairo University, Cairo, Egypt ; <sup>3</sup> Medical Biochemistry, Faculty of Medicine-Cairo University, Cairo, Egypt ; <sup>4</sup> Chest Diseases, Faculty of Medicine-Cairo University, Cairo, Egypt ; <sup>5</sup> Chest Diseases, Faculty of Medicine-Cairo University, Cairo, Egypt and <sup>6</sup> Chest Diseases, Faculty of Medicine-Fayoum University, Fayoum, Egypt .

**Body:** Ras is a family of genes that have many biological functions but mainly control cell growth and development. Chemicals in cigarette smoke cause mutation in ras gene. Smoking causes lung cancer because the carcinogen bound strongly to the precise site in K-ras gene. Our aim of the study is to detect genetic polymorphism of K-ras gene in smoking related diseases. The study included 50 patients, 20 with chronic obstructive pulmonary disease (COPD), 20 with lung cancer and 10 normal subjects. All patients and normal subjects were smokers. Serum samples were evaluated, DNA was extracted and mutational analyses performed using a PCR assay. Two (10%) out of 20 COPD patients and four (20%) out of 20 lung cancer patients had mutated k-ras gene, while there was no mutation in the control group. The mutation of k-ras gene was associated with smoking history, severity of COPD and cell type of lung cancer. Mutations were observed in heavy smokers in COPD (13.3%) and lung cancer (22.2%) patients. Moderate (14.3%) and severe (12.5%) obstruction in COPD patients were associated with mutations. All k-ras mutations were observed in non small cell lung cancer (NSCLC (95%). In conclusion, k-ras mutation is detected in the lung cancer and COPD patients suggesting that COPD patients were in the early stages of developing cancer. For COPD patients the ras gene might be a biomarker for cancer as a screening of DNA in serum using a noninvasive technique.