

Pathogenic Mechanisms in Chronic Obstructive Pulmonary Disease Due to Biomass Smoke Exposure [Mecanismos patogénicos en la enfermedad pulmonar obstructiva crónica causada por exposición a humo de biomasa]

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Chronic obstructive pulmonary disease (COPD) mortality and morbidity have increased significantly worldwide in recent decades. Although cigarette smoke is still considered the main risk factor for the development of the disease, estimates suggest that between 25% and 33% of COPD patients are non-smokers. Among the factors that may increase the risk of developing COPD, biomass smoke has been proposed as one of the most important, affecting especially women and children in developing countries. Despite the epidemiological evidence linking exposure to biomass smoke with adverse health effects, the specific cellular and molecular mechanisms by which this pollutant can be harmful for the respiratory and cardiovascular systems remain unclear. In this article we review the main pathogenic mechanisms proposed to date that make biomass smoke one of the major risk factors for COPD. © 2014 SEPAR.

Biomass smoke

Chronic obstructive pulmonary disease

Genotoxicity

Inflammation

Pathogenesis

biomass

biomass smoke

chronic obstructive lung disease

developing country

environmental exposure

human

morbidity

mortality

pathogenesis

risk factor

Short Survey

smoke

smoking

age

high risk population

inflammation

molecular mechanics

oxidative stress

pathogenicity

pollutant

sex

adult

adverse effects

air pollutant

animal

child

complication

cooking

drug effects

environmental exposure

female

gas

heating

indoor air pollution

inflammation

lung burn

male

metabolism

mouse

particulate matter

pregnancy

prenatal exposure

Pulmonary Disease, Chronic Obstructive

rural population

secretion (process)

smoke

ascorbic acid

glutathione

interleukin 6

interleukin 8

reactive oxygen metabolite

superoxide dismutase

tobacco smoke

tumor necrosis factor

air pollutant

autacoid

cytokine

gas

inflammasome

particulate matter

smoke

transient receptor potential channel

Adult

Air Pollutants

Air Pollution, Indoor

Animals

Biomass

Child

Cooking

Cytokines

Environmental Exposure

Female

Gases

Heating

Humans

Inflammasomes

Inflammation

Inflammation Mediators

Male

Mice

Oxidative Stress

Particulate Matter

Pregnancy

Prenatal Exposure Delayed Effects

Pulmonary Disease, Chronic Obstructive

Rural Population

Smoke

Smoke Inhalation Injury

Transient Receptor Potential Channels