AGING LUNGS: ROOM FOR PREVENTIVE REHABILITATION

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This presentation concentrates on natural age-changes in the lungs, particularly confined to the surfactant producing pneumocytes type II. Pulmonary surfactant is essential for maintaining lung function. Age-changes in surfactant and their possible clinical consequences are unsettled. In a recent study we attempted to gain insight into the mechanisms underlying changes in surfactant in old age. We examined the ultrastructure of surfactant-producing lamellar bodies in pneumocytes II cells and of extracellular tubular myelin unfolding from the lamellar bodies in the lungs of two contrasting age-groups of rats: young, 2-3 months old, and senescent, 26 months old. In the senescent lungs, the lamellar bodies were partially emptied of their content or contained gaps and blebs. No regularly shaped myelin-tubular mesh, so characteristic in alveoli of the young lungs, could be recognized in the old ones. The alveolar hypophase was filled up with tubular myelin debris. We submit that the alveolar epithelium is a target tissue for age-changes in the lungs which underlie a gradual decline of arterial oxygen content with age. Advancing older age, therefore, raises the propensity for dysfunctional lung hypoxic pathologies and worsens the outcome of therapeutic interventions. Respiratory rehabilitation offers specific breathing exercise and counseling coordinated to benefit one’s respiratory health. Breathing exercise halts a decline in arterial oxygenation, which counteracts the aging process.