




Risk factors associated with the development of interstitial lung abnormalities

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Some individuals older than 50 years may present interstitial lung abnormalities which are associated with a greater risk of all-cause mortality. This study provides demographic and molecular factors which may help to identify individuals at higher risk. <https://bit.ly/2Lc4y88>

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Abstract

Background Around 8–10% of individuals over 50 years of age present interstitial lung abnormalities (ILAs), but their risk factors are uncertain.

Methods From 817 individuals recruited in our lung ageing programme at the Mexican National Institute of Respiratory Diseases, 80 (9.7%) showed ILAs and were compared with 564 individuals of the same cohort with normal high-resolution computed tomography to evaluate demographic and functional differences, and with 80 individuals randomly selected from the same cohort for biomarkers. We evaluated *MUC5B* variant rs35705950, telomere length, and serum levels of matrix metalloproteinase (MMP)-1, MMP-2, MMP-3, MMP-7, MMP-8, MMP-9, MMP-12, MMP-13, interleukin (IL)-6, surfactant protein (SP)-D, α -Klotho and resistin.

Results Individuals with ILAs were usually males ($p<0.005$), older than controls ($p<0.0001$), smokers ($p=0.01$), with a greater frequency of *MUC5B* rs35705950 (OR 3.5, 95% CI 1.3–9.4; $p=0.01$), and reduced diffusing capacity of the lung for carbon monoxide and oxygen saturation. Resistin, IL-6, SP-D, MMP-1, MMP-7 and MMP-13 were significantly increased in individuals with ILAs. Resistin (12 ± 5 versus 9 ± 4 ng·mL⁻¹; $p=0.0005$) and MMP-13 (357 ± 143 versus 298 ± 116 pg·mL⁻¹; $p=0.004$) were the most increased biomarkers. On follow-up (24±18 months), 18 individuals showed progression which was associated with gastro-oesophageal reflux disease (OR 4.1, 95% CI 1.2–12.9; $p=0.02$) and in females with diabetes mellitus (OR 5.3, 95% CI 1.0–27.4; $p=0.01$).

Conclusions Around 10% of respiratory asymptomatic individuals enrolled in our lung ageing programme show ILAs. Increased serum concentrations of pro-inflammatory molecules and MMPs are associated with ILAs.