7.01 A case series investigating a rare phenotype FZ Alpha-1 antitrypsin deficiency in Ireland

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Alpha-1 antitrypsin deficiency (AATD) presents as a genetic disorder arising from a mutation in the SERPINA1 gene found on the long arm of chromosome 14 at 14q3- 32.1. The most common form of severe AATD is the Z homozygous form. The most common manifestation of severe AATD (ZZ) is emphysema which can occur even in the absence of a smoking history but which is markedly exacerbated by cigarette smoking, cirrhosis, and panniculitis. There are over 200 SERPINA1 mutations in existence. Roughly 5000 people have been diagnosed with moderate AATD (MZ & SZ) and 450 people with severe AATD. Interestingly, there have been 13 patients found with the rare FZ genotype identified through the National Targeted Detection Programme for AATD. The F mutation (Arg223Cys) causes a qualitative deficiency and is not associated with serum AAT deficiency, making it difficult to diagnose. This case series characterises patients with FZ genotype by reporting AAT levels, pulmonary function tests, lung imaging and liver testing. We also discuss clinical progression of these patients and compare them to the more common deficiencies.

Conflict of Interest: *None to declare*