



# A well-designed/conducted study on alpha-1 antitrypsin epidemiology not quoted

*To the Editor:*

We read with interest the outstanding European Respiratory Society (ERS) statement on  $\alpha_1$ -antitrypsin deficiency (AATD) led by R.A. Stockley and M. Miravittles with the collaboration of 13 European experts on the subject [1].

While the main objective of the manuscript was a broad update on the “state of the art” knowledge in the diagnostic and treatment of AATD-related pulmonary disease, other additional interesting aspects of this topic, including some epidemiological details, are also briefly discussed throughout the document.

For example, in the second paragraph of the section “Role and benefits of screening” it is stated that “few population-based studies ... randomly screened the general population”, and the authors only mention those of CARROLL *et al.* [2] in 1100 Irish subjects from the Trinity Biobank (a national buccal swab DNA collection selected at random from the electoral register constituted by individuals over the age of 18 years), and that of KACZOR *et al.* [3] performed in a 859 random sample of age- and gender-stratified residents, aged 20 years or older, from the municipal directory of Kraków, Poland.

However, although the authors of the ERS statement claim to have conducted a search until June 2016 in the most complete and reliable databases “with no language restrictions”, another valuable study, unfortunately not widely reported and little known, has been omitted [4]. This pioneering study was the first, and likely the only one, performed on a truly representative sample of a general population composed by subjects of all ages (from newborns to older people living in the community), through a simple random sampling technique, with which each individual was chosen entirely by chance. This study was conducted in the central area of Asturias (Northern Spain) at the end of the 1990s, and it was initially published in Spanish with abstract in English, and then occasionally cited in other papers in English [5, 6].

The Asturian region where the study was carried out is a community located in the upper and middle basins of the Nalon river, with an extension of 646 km<sup>2</sup> and a total population of 93 642 inhabitants. To plan the appropriate sample size, a pre-estimation with the statistical program Rsigma (Horus Hardware) was used, and it provided a theoretically appropriate sample size of 1452 individuals. Then, using random numbers obtained by Rsigma, a number of lists of individuals were extracted from the census records of the county municipalities, being the final recruitment of 1116 individuals (76.9%).

The mean $\pm$ SD age of the random sample (male, 45%; female, 55%) was 46.2 $\pm$ 29.9 years with a range of 4–91 years. The characteristics of the sample are graphically shown in figure 1.

$\alpha_1$ -antitrypsin serum levels of the selected subjects were measured by immunonephelometry and Pi phenotypes were determined by isoelectrofocusing in polyacrilamide gels. The frequency of Z allele was 19.7 per 1000 (one of the highest in Europe) and the allelic frequency of the S allele 99.9 per 1000 (one of the highest in the world, but similar to other found in the Iberian peninsula).

We hope that this comment will be helpful for possible future historical reviews of AATD.

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 @ERSpublications

**Recall of a historical study on the epidemiology of the alpha-1 antitrypsin gene**

<http://ow.ly/yXAH30hZXiQ>

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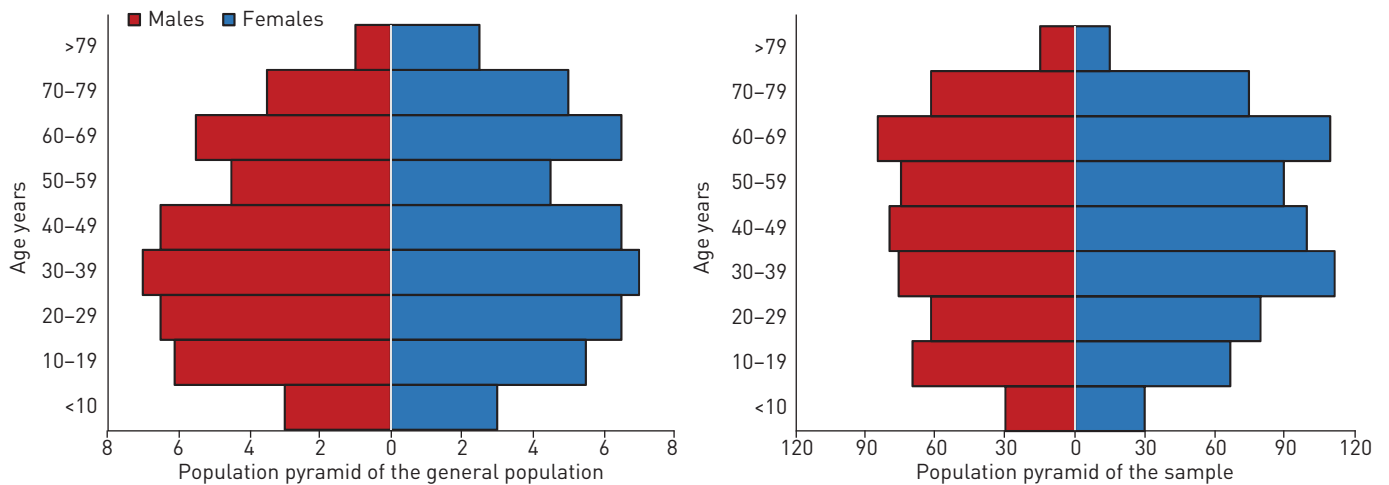


FIGURE 1 Population characteristics of the general population and the study sample [4].

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