Prevalence of Metabolic Syndrome in Extremadura, Spain

To the Editor,

We read with interest the article by León et al[1] who studied a sample of workers aged 25 to 64 years recruited during their routine medical check-up exams undertaken by the prevention services of FREMAP during 2003 and estimated an overall prevalence of the metabolic syndrome (MS) of 13.4%, higher in men (15.9%) than in women (5.2%). What really caught our attention, though, was that the greatest prevalence of MS in the various autonomous regions in Spain corresponds to men in Extremadura: 22.15% (95% confidence interval [CI], 21.7%-22.5%), whilst the prevalence in women is also the highest in Spain: 9.1% (95% CI, 8.1%-10.2%).

This high prevalence of MS in Extremadura, by far the highest in Spain, is surprising. As the authors point out, the prevalence not only of MS, but also of other cardiovascular risk factors, like hypertension, diabetes and obesity, and even ischemic heart disease, is greater in regions of southern Spain,[1] including Extremadura. Our group (GERIVA: Grupo de Estudio del Riesgo Vascular de Extremadura [Group for the Study of Vascular Risk in Extremadura]) recently published a study analyzing the prevalence of MS according to various different criteria in the province of Caceres (also in the region of Extremadura). The study involved the general population over the age of 24 years, and was based on a population sample of 1314 subjects (55.4% women), with a mean age of 52.8 (18) years.[2] The prevalence of MS according to the ATP-III (2001) criteria,[3] which we understand to be those used for the diagnosis of MS by León et al, was 18.6% (95% CI, 16.5-20.8), and was similar in men (18.3%; 95% CI, 15.2-21.4) and women (19%; 95% CI, 16.2-21.8). This prevalence is similar or just slightly higher than that of other similar studies carried out in Spain and with which we compared our findings.[2] Thus, a prevalence, especially in men, of 22.15% would seem high, both in absolute terms and in comparison with the prevalence seen in the other autonomous regions

of Spain, particularly when these authors only include a population up to the age of 64 years, and it is well known, as our study clearly shows, that the prevalence of MS is much higher with effect from this age.

Also surprising were the great differences found in the study by León et al between sexes. The study by our group found no differences between men (18.3%) and women (19%), a finding that was also seen in most of the recent reports referred to in our article.[2] This difference may be due to the large variation in the sample between the numbers of men and women in the study by León et al.[1]

Finally, another recently published study carried out in the province of Badajoz (again in Extremadura) among persons who attended their primary health care center[4] reported a prevalence similar to that of León et al[1] (23.8%). However, this very high prevalence was explained by the fact that the study was not done in the general population but rather in an elder population, as is that of persons attending their health center.

In view of these points, we believe that the prevalence in Extremadura of MS, and probably of other cardiovascular risk factors, may be slightly above the national mean, but not so much as suggested by León et al.[1]

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REFERENCES

1. León M, Andrés EM, Cordero A, Pascual I, Vispe C, Laclaustra M, et al. Relación entre el síndrome metabólico y la mortalidad por cardiopatía isquémica en España. Rev Esp Cardiol. 2009;62:1469-72.
2. Barquilla A, Polo J, Gómez-Martino JR, Gómez-Barrado JJ, Martínez-Sánchez JM, Guijarro P, et al. Prevalencia del síndrome metabólico en la población general de la provincia de Cáceres (Estudio SIMCA). SEMERGEN. 2009;35:489-97.
3. Executive Summary of the third report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol In Adults (Adult Treatment Panel III. JAMA. 2001;285: 2486-97.
4. García-Pérez R, García-Moreno R. Prevalencia del síndrome metabólico y enfermedades clínicas asociadas en un grupo de población urbana del Centro de Salud Zona Centro de Badajoz. SEMERGEN. 2007;33:449-55.

Response

To the Editor,

The high prevalence of the metabolic syndrome found in this study in men from Extremadura is not surprising if we bear in mind, as already mentioned, the agreement with other studies on cardiovascular risk factors, mainly obesity and diabetes mellitus, in different geographical areas of Spain. In addition, the methods used in our study were correct and rigorous, and the prevalence was standardized for age and sex.

The comparison of prevalence figures of cardiovascular risk factors in different studies is very complex and the methodological base is sometimes weak. The lack of a homogenous system, both in the protocol used to obtain the data and in their later treatment, is a generalized problem that makes comparison much more difficult, which is reflected in the difficulty involved in producing valid and general conclusions. It is for this reason that the methods of the various studies should be carefully reviewed before actually comparing the results.

As we stated in the section on limitations, we were unable to control certain factors that may have influenced the later results, such as the socioeconomic level of the workers or the type of activity they carried out, though we know that the mutual insurance company deals with workers employed in different activities. In spite of the fact that the study involved a large sample (600 workers), they are not necessarily representative of the general population of Extremadura.

About 90% of the sample in our study came from the province of Badajoz, in Extremadura. In the study mentioned by the authors of the letter, undertaken with a sample of patients in the same province, the authors found a very similar prevalence to that of our study. Accounting for the high prevalence solely by the inclusion of persons older than 65 years of age and the sample type is questionable, given that 80% of that sample were younger than 65 years of age.

The low prevalence of the metabolic syndrome in female workers, in all the autonomous regions studied and in all the age ranges, as compared with the figures published for the general female population is almost certainly the result of differences in the socioeconomic profile.

What is obvious, though, is the presence of large differences in the prevalence of the metabolic syndrome depending on the geographical area studied, as occurs with mortality from ischemic heart disease. Further research using methodologically rigorous studies is required to attempt to explain this difference if we wish to increase our understanding

of cardiovascular prevention, more so if we aim to establish effective measures adapted to the situation in each region.

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