

EDITORIAL

New times for Prison Health: The constraints of age and metabolic syndrome

Prison health is facing new or at least different times, since the time of control and management of infectious pathology has given way to an increase of non-communicable chronic conditions¹⁻², leading to necessary structural and functional readjustment of our organizational system. On one hand, these changes are a direct consequence of an ageing population: life expectancy has grown between 12 and 13 years on average throughout the last 50 years³ from 67 to 79 years in males and from 72 to 85 in females. On the other hand, they are a consequence of unhealthy lifestyles: inappropriate diets, sedentary habits, obesity, smoking, etc. Thus “age” and “metabolic syndrome” have become issues of paramount importance.

Ageing is not synonymous to disease, but the addition of epidemiological risk factors to age entails an increased prevalence of chronic pathology and thus, an increased morbimortality. The average age of Spanish convicts is currently 39 years old, although it should be noted that the number of inmates over 60 years old has increased four-fold so far this century: from 584 to 2071. In fact, the 41 to 60 age group includes 22862 inmates; this is 1 in every 3 Spanish inmates⁴. Therefore, those who are imprisoned, as well as those who have been for a while need more healthcare resources and more frequently need treatment for the control of chronic conditions such as hypertension, dyslipidemia, diabetes, hyperuricemia, COPD or cardiovascular and ischemic pathologies, as it has been already stated in some studies carried out in Spanish prisons⁵.

Metabolic syndrome was first described in 1923 by Swedish MD. Eskil Kylin, who described it as an association between hypertension, increased levels of blood glucose and the presence of gout⁶. Until the 1980s different definitions were used for the same concept, such as Raven's “syndrome X”⁷ which included “several metabolic alterations based on insulin resistance”. Currently, according to the International Diabetes Federation (IDF) metabolic syndrome is “a cluster of metabolic alterations including central obesity, reduced HDL cholesterol, raised triglycerides, raised blood pressure and raised fasting plasma

glucose”⁸. This syndrome is one of the main public health issues of this century. Studies carried out in our country based on data from different autonomous communities, such as the ENRICA⁹ or the DARIOS¹⁰ study, conclude a prevalence of metabolic syndrome of around 22.7-32.0% in the Spanish population. This is even higher when the same IDF criteria are applied to patients suffering from schizophrenia or bipolar disorder, as the CRESSOB¹¹ study has already pointed out, with a prevalence of 71.1% in males and 65.8% in females. Among predictive factors, the following have been pointed out: genetic risk, sedentary lifestyle, inactivity, diet and the use of second-generation antipsychotics (clozapine, olanzapine, risperidone, quetiapine, ziprasidone or aripiprazole) which minimize extrapyramidal side effects in comparison with first-generation drugs but which increase body weight and the risk of dyslipidemia and/or hyperglycemia, therefore promoting the appearance of metabolic syndrome¹²⁻¹³. This is especially crucial in prison, where the prevalence of severe mental disorders is four times higher than in the general population¹⁴ and where approximately 44% of patients pursuing psychiatric consultation suffer from psychotic disorders and other conditions treated with neuroleptic drugs.

As we can infer from the aforementioned, the provision of healthcare in prison has to adapt to its ageing population and the increased risk of alterations included in the metabolic syndrome.

To that end, it is not enough simply to remind and discuss it, the implementation of preventive and assistance activities and programs both inside and outside prison is needed, to provide much more that epidemiological data. It is necessary to design and implement preventive strategies (to quit smoking, to promote aerobic exercise, no avoid overweight and obesity, etc.) which should be aimed at reducing the causes of premature death which had been pushed into the background due to the importance of the HIV/AIDS epidemics in prison². Moreover, this will probably need of intensive efforts in the penitentiary context, where some risk habits, such as smoking are

especially widespread – some studies estimate that the prevalence of smoking among inmates is around 70-80%^{5, 16}, and thus are difficult to eliminate. Anyhow, it seems evident that the approach for a comprehensive future plan should be based on prevention aimed at modifying lifestyles, especially regarding improved diets, promoting physical activity and quitting smoking. To that end, probably profound social transformation is needed, initiated in children as to promote and integrate health improving activities.

With regard to diet, interventions should be aimed at promoting a Mediterranean diet, which has proved to reduce the incidence of diabetes and therefore reduce the risk of premature death, without disregarding other low-carbohydrate diets and low glycemic load meal plans, nor hypocaloric diets with low saturated fat, trans fat, cholesterol and sugar load¹⁷. In this respect, there has been some field experience in some correctional facilities by means of nutrition specialists helping design meal plans for preventive purposes¹⁸ or by means of workshops and even self-help groups¹⁹, according to Hippocrate's principle: *Let food be your medicine and medicine be your food*²⁰.

With reference to physical activity, this has been used to different ends in prison²¹. It has been used to reduce criminality, as a basis for social rehabilitation, as an instrument to reduce drug abuse or to promote personal self-control, among others. If we further consider that physical activity is effective in preventing and treating overweight and obesity, improving insulin resistance (mainly aerobic and strength exercises) and fasting plasma glucose levels in type 2 diabetes, as a therapeutic complement in the control of dyslipidemia and hypertension or as an element in the reduction of the incidence of some types of cancer such as breast or colon cancer²², there can be little doubt that physical exercise is convenient and necessary and thus should be promoted.

Last, the prevention of smoking is of paramount importance in prison, since the prevalence of this habit is almost three times higher than in the general population. It is the largest preventable cause of ill health and premature death in Western countries and therefore, intervention strategies should be implemented by means of prevention, withdrawal and treatment programmes, which should systematically be included in all prisons.

Prison population is ageing and its epidemiological profile has undergone profound changes throughout recent years. Therefore, it is necessary to implement modifications in the healthcare system that will meet such changes. It is time to replace the objective of survival, threatened for so many years by the

AIDS epidemics, for qualitative improvements aimed at reducing preventable causes of premature death. It is time, in conclusion, to provide years with more life and not life with more years. To reach maturity and an old age is an extraordinary objective. To further have a good health condition is an essential complement which we cannot renounce.

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REFERENCES

1. Vera-Remartínez EJ. Mortalidad en prisión. De las enfermedades transmisibles a las enfermedades cardiovasculares y los tumores. Una revisión histórica. Rev Esp Sanid Penit. 2014; 16 (Supl 1):33-36.
2. Marco A. Evolución de la mortalidad en población reclusa tras la introducción del tratamiento anti-retroviral de gran actividad (TARGA). Rev Esp Salud Pública 2011; 84: 233-6.
3. Organización para la Cooperación y el Desarrollo Económico (OCDE) [Internet]. Paris: OCDE; 2016 [citado 2016 Mar 10]. Datos. Estadísticas de Salud. Expectativa de vida al nacimiento; [about. 1 p.]. Available from: <https://data.oecd.org/healthstat/life-expectancy-at-birth.htm>
4. López-Fonseca Oscar. ¿Cárceles o geriátricos?: los presos ancianos pasan de 600 a más de 2000 en sólo 13 años. Vozpópuli digital SA [Internet]. 2014 Abril [cited 2016 Mar 10]; [about. 2 p.]. Available from: <http://vozpopuli.com/actualidad/42053-carceles-o-geriatricos-los-presos-ancianos-pasan-de-600-a-mas-de-2-000-en-solo-trece-anos>
5. Vera-Remartínez EJ, Borraz-Fernández JR, Domínguez-Zamorano JA, Mora-Parra LM, Casado-Hoces SV, González-Gómez JA, et al. Prevalencia de patologías crónicas y factores de riesgo en población penitenciaria española. Rev Esp Sanid Penit. 2014; 16: 38-47.
6. Kylin E. Studien uber das Hypertonie-Hyperglyca "mie-Hyperurika" miesyndrom. Zentralbl Inn Med. 1923; 44:105-27.
7. Raven G. Banting lecture 1988. Role of insulin resistance in human disease. Diabetes 1988; 37: 1371-6.
8. Eckel RH, Grundy SM, Zimmet PZ. The metabolic syndrome. Lancet. 2005; 365: 1415-8.
9. Guallar-Castillón P, Francisco-Pérez R, López-García E, León-Muñoz LM, Aguilera MT, Gra-

- ciani A, et al. Magnitud y manejo del síndrome metabólico en España en 2008-2010: Estudio ENRICA. *Rev Esp Cardiol*. 2014; 67:367-73.
10. Fernández-Bergés D, Cabrera de León A, Sanz H, Elosua R, Guembe MJ, Alzamora M, et al. Síndrome metabólico en España: prevalencia y riesgo coronario asociado a la definición armónica y a la propuesta de la OMS. Estudio DARIOS. *Rev Esp Cardiol*. 2012; 65: 241-8.
 11. Gutiérrez-Rojas L, Azanza JR, Bernardo M, Rojo L, Mesa F, Martínez-Ortega JM. Prevalencia del síndrome metabólico en pacientes españoles con esquizofrenia y sobrepeso. El estudio CRESSOB. *Actas Esp Psiquiatr*. 2014; 42: 9-17.
 12. Villegas-Martínez I, López-Román J, Martínez González AB, Villegas García JA. Obesidad y síndrome metabólico en pacientes con esquizofrenia. *Psiquiatr Biol*. 2005; 12: 39-45.
 13. Cortés-Morales B. Síndrome metabólico y antipsicóticos de segunda generación. *Rev Asoc Esp Neuropsiq*. 2011 ; 31: 303-20.
 14. Arroyo-Cobo JM. Estrategias asistenciales de los problemas de salud mental en el medio penitenciario, el caso español en el contexto europeo. *Rev Esp Sanid Penit* 2011; 13:100-11.
 15. Arnau-Peiró F, García-Guerrero J, Herrero-Matías A, Castellano-Cervera JC, Vera-Remartínez EJ, Jorge-Vidal V, et al. Descripción de la consulta psiquiátrica en centros penitenciarios de la Comunidad Valenciana. *Rev Esp Sanid Penit*. 2012; 14: 50-61.
 16. Yagüe-Olmos C, Cabello-Vázquez MI. Programa de deshabitación tabáquica para internos y trabajadores de un centro penitenciario. *Rev Esp Sanid Penit*. 2008; 10(2): 57-64.
 17. Matia-Martín P, Lecumberri-Pascual E, Calle-Pascual AL. Nutrición y síndrome metabólico. *Rev Esp Salud Pública*. 2007; 81: 489-505.
 18. Gil-Delgado Y, Domínguez-Zamorano JA, Martínez-Sánchez-Suarez E. Valoración de los beneficios para la salud conseguidos mediante un programa nutricional dirigidos a internos con factores de riesgo cardiovascular del Centro Penitenciario de Huelva. *Rev Esp Sanid Penit*. 2011; 13: 75-83.
 19. Minchón-Hernando A, Domínguez-Zamorano JA, Gil-Delgado Y. Educación para la salud en centros penitenciarios: evaluación de una experiencia en personas con diabetes. *Rev Esp Sanid Penit*. 2009; 11(3):73-9.
 20. Zozaya A. Aforismos y pronósticos de Hipócrates. Madrid: Maxtor; 2008.
 21. Martos-García D, Devís-Devís, J, Sparkes AC. Deporte entre rejas ¿algo más que control social? *RIS*. 2009;67(2):391-412.
 22. Subirats-Bayego E, Subirats-Vila G, Soteras-Martínez I. Prescripción de ejercicio físico: indicaciones, posología y efectos adversos. *Med Clí (Barc)*. 2012; 138: 18-24.