COST OF ILLNESS OF OSTEOPOROSIS IN ITALY

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BACKGROUND

Osteoporosis is a systemic disease characterized by reduced bone mass and qualitative alterations of the macro and micro architecture of skeletal tissue. These alterations lead to an increase in bone fragility and, therefore, to the risk of fractures also in case of low / medium level trauma. The most frequent osteoporotic fractures are those of the wrist, humeral, costal, pelvis, vertebral and femoral. These fractures cause complex disabilities, morbidity, reduced quality of life, functional limitation; in addition, the vertebral and femoral ones increase the relative mortality risk [1].

OBJECTIVES

The objective of this study was to estimate the costs associated with the management and treatment of osteoporosis in order to assess the economic burden in Italy for 2017, in terms of direct medical costs and social security costs. A further objective of this study was to carry out a focus on costs related to patients with severe osteoporosis, where severe means the presence in the patient with osteoporosis of a previous fracture.

METHODS

A Cost of Illness model was developed to estimate the average cost per year sustained by the NHS and Social Security System in Italy. A Systematic Literature Review was performed to obtain epidemiological, direct and indirect costs parameters where available. Hospitalization costs were calculated considering the administrative database of hospitalizations available in Italy between 2008-2016. Data were extrapolated considering ICD9-CM 733.0 (Osteoporosis) in the primary or secondary diagnosis of each hospitalization. Costs were estimated considering the DRG national tariff associated with each hospitalization. Using the same inclusion criteria, the administrative databases of the National Social Security Institute (INPS) (2009-2015) were analysed to estimate the pension and disability costs from the social perspective.
Finally, in order to estimate costs due to patients with severe osteoporosis, from the administrative database of hospitalizations it was possible to select all subjects with a age of ≥ 45 years with osteoporosis in the main or secondary diagnosis and the presence of a fracture, subjects with age ≥ 45 and the presence of two fractures and subjects with age ≥ 45 and the presence of three or more fractures.

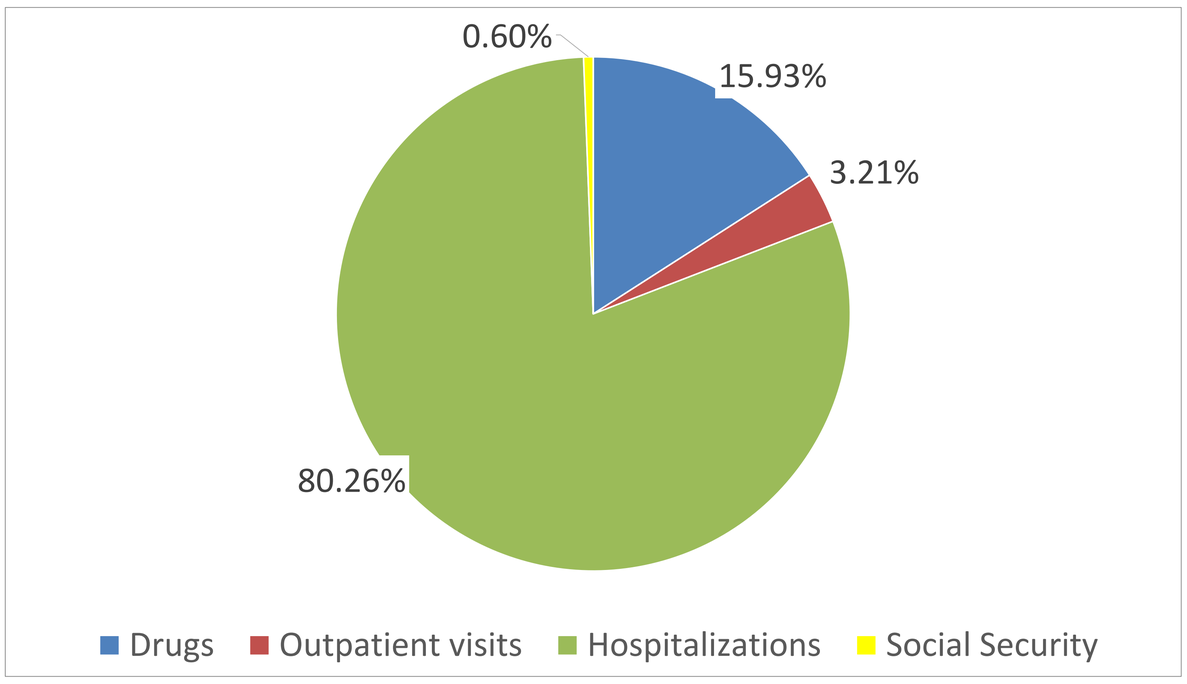
RESULTS

Results show a total cost for osteoporosis in Italy in 2017 of about € 2.2 billion, 99.4% of which are due to direct costs (drugs, hospitalizations and outpatient visits). Table 1 shows the average annual costs estimated at national level for each cost item considered in the analysis. Figure 1 shows the percentage distribution of these costs.

Table 1: CoI Osteoporosis in Italy, 2017

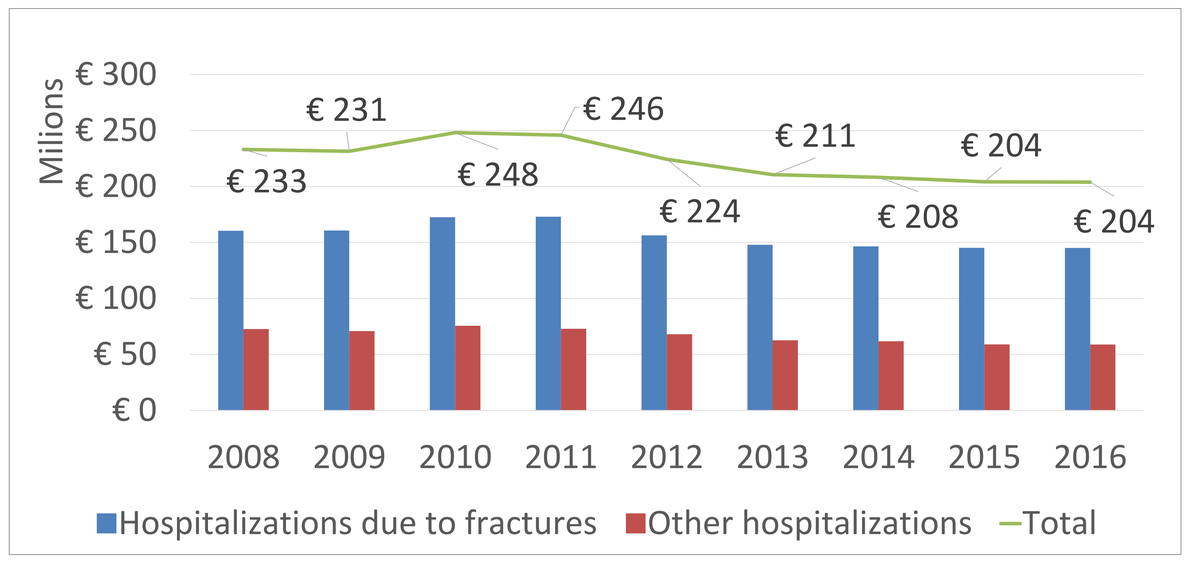
	Average total cost	Average cost per patient
Drugs	€ 354,388,717	€ 81
Outpatient visits	€ 71,422,350	€ 16
Hospitalizations	€ 1,785,874,284	€ 8,591
Social Security	€ 13,377,798	€ 3
Total	€ 2,225,063,148	€ 8,691

Figure 1: Percentage distribution of cost items



In terms of direct costs, the average annual cost per patient with osteoporosis was € 8,691; about 98,8% of this average cost was attributable to hospitalizations (€ 8,591). Average hospitalizations costs became € 9,050 if we consider patients older than 75 years.
The focus on patient with severe osteoporosis showed an annual cost due to hospitalizations of € 223,257,024. The average annual cost due to hospitalizations for patients with severe osteoporosis was € 12,336, thus substantially higher (+ 44%) than estimated for a patient with non-severe osteoporosis (€ 8,591).

Figure 2: Average annual hospitalizations costs due to patients with severe osteoporosis



CONCLUSION

The study provided an estimate of the total burden due to osteoporosis in Italy. The analysis showed that osteoporosis represents one of the main health problems in Italy and the ability to maintain patients in a non-severe health state could decrease the economic burden from both NHS and social perspective.

REFERENCES

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