COSTA RICA

OVERVIEW

With a population of 4.6 million people, Costa Rica occupies, according to the 17th State of the Nation 2010 report, one of the best positions in the area of health in Latin America. Thanks to Social Security, a statewide system of health care covering 92% of the population, Costa Rica recently achieved the highest life expectancy rate in Latin America. However, though there are many positive indicators, this system has a number of severe problems that negatively impact service provision. One is financial and the other, a more complex issue, is the progressive ageing of the population. There is a need for global restructuring to address these changes in the country’s epidemiological profile. There is also a need for advances in medical care to take advantage of new diagnostic and therapeutic alternatives. These circumstances affect the efforts being made in the field of prevention, early diagnosis and effective treatment of osteoporosis.

Despite not having specific statistics in this field, there is data to support a prevalence rate of 40% osteopenia and 22% osteoporosis in postmenopausal women in Costa Rica. In 2004 there were 2015 hip fractures reported in Costa Rica. Of these fractures, 1492 were reported in the population over 60 years.

The Asociación Costarricense de Climaterio Menopausia y Osteoporosis (ACCMYO) was founded in 1999. Each year, ACCMYO organizes a national congress for health care professionals. There are guidelines for the management of osteoporosis driven by ACCMYO, however, there is no national health plan with clear policies that addresses this issue comprehensively. The Society also actively participates in lobbying for new medication approval at the government level.

In the diagnostics field, densitometry equipment is concentrated in metropolitan areas for the private practice of medicine; with availability limited in rural areas and within the Social Security System.

Therapeutically, only generic alendronate is available in the state system but multiple alternatives are available in the private sector. Unfortunately only a small segment of the population has the financial resources to access the private sector.

KEY FINDINGS

Population growth statistics

The present population of Costa Rica is estimated to be 4.6 million, of which 19% (884,000) is 50 years of age and older and 4% (184,000) is 70 years and over. By 2050, it is estimated that the total population will rise to 6.1 million, of which 41% (2.5 million) will be 50 years and older and 15% (900,000) will be 70 years and older (fig 1).

FIGURE 1 Population projection for Costa Rica until 2050

SOURCE US Census Bureau

Epidemiology

In 2010, ACCMYO evaluated data from four principal diagnostic osteoporosis centers within major metropolitan areas of Costa Rica. Of the 5580 DXA scans analyzed (97% women, 3% men), the researchers found abnormal DXA results in 3528 (63%) patients. 64.5% were osteopenic and 35.5% were osteoporotic.
Hip fracture
Sancho Rojas CA et al. examined hip fracture incidence in Costa Rica between 1994 and 1998. On average, the number of hip fractures per year in people aged 50 and over was 1205. López G et al. reviewed hip fractures reported by the Statistics Department of the Costa Rican Social Security Fund during the years 2000-2004. In the 61-80 year olds, 2991 cases of hip fracture were reported during that time frame. There was a steady increase in the number of fractures each year with an overall annual incidence of 458:100 000 in the population 60 years and over in 2004. Assuming a constant age adjusted incidence rate, we can expect the annual number of hip fractures in the population 60 years and over to reach 7618 in Costa Rica by the year 2050.

ACCMYO estimates that approximately 75% of these hip fractures are treated surgically and the associated costs are covered by social security or private insurers. The direct hospital cost for treating a hip fracture is estimated at 8000 USD, with an average hospital bed stay of 12 days. There is no data on social costs of hip fracture in Costa Rica.

Vertebral fracture, other fragility fractures
According to ACCMYO, the number of vertebral fractures is underestimated and many go undiagnosed. In 2005, ACCMYO conducted a survey evaluating 108 hospitalized patients 60 years and over. In those patients, the prevalence of vertebral fractures was 33.3%.

Diagnosis
In Costa Rica there are 24 DXA machines allowing for approximately one DXA for every 200 000 people. The average length of wait for a DXA scan is six months for those within the Social Security System and no wait for those with private health insurance. DXA machines are only available in urban centers. There are no data available regarding ultrasound machines.

Reimbursement policy
The cost of a DXA scan is 55 USD. The Social Security System covers more than 90% of the population, offering DXA diagnosis for the population with high osteoporotic fracture risk. Only three DXA machines are available for this purpose and the waiting list is very long. The other 18 DXA machines are allocated to private medical practice. The National Private Insurance doesn’t cover the exam for primary diagnosis, and is reimbursed only for follow up after a fracture.

When medically indicated, bisphosphonates and hormone replacement therapy are covered by the Social Security System. Most osteoporosis medications are reimbursed by private health care insurance on a case by case basis before a diagnosed fracture. After fracture, all patients can receive reimbursement for osteoporosis medications.

Calcium and vitamin D
Calcium, vitamin D supplements, and fortified foods are available in Costa Rica. In 2001, a study looking at

| TABLE 1 Reported mean daily calcium intake of Costa Rican teenagers, adapted with permission |
|-----------------|-----------------|-----------|-----------------|-----------------|-----------|-----------------|-----------------|-----------|
| VARIABLE        | URBAN (n=68)    | GIRLS (n=62) | P VALUE | URBAN (n=68)    | GIRLS (n=62) | P VALUE | URBAN (n=136)  | GIRLS (n=124)  | P VALUE |
| Weight (kg)     | 58.1 ± 12       | 53.3 ± 7    | 0.001   | 55.6 ± 11       | 53.4 ± 8    | 0.197   | 57.2 ± 11       | 53.2 ± 8    | 0.001   |
| Height (cm)     | 165.4 ± 9       | 157.7 ± 6   | 0.000   | 163.6 ± 8.9     | 156.5 ± 5   | 0.000   | 164.9 ± 9       | 157 ± 6     | 0.000   |
| Energy intake (kcal) | 2439 ± 227     | 2078 ± 216  | 0.002   | 2318 ± 278      | 1939 ± 248  | 0.002   | 2378 ± 203      | 2008 ± 287  | 0.000   |
| Protein intake (g) | 78 ± 15         | 63 ± 12     | 0.000   | 66 ± 11         | 53 ± 13     | 0.009   | 72 ± 14         | 59 ± 13     | 0.000   |
| Calcium intake (mg) | 723 ± 336       | 578 ± 302   | 0.011   | 516 ± 347       | 467 ± 361   | 0.285   | 619 ± 312       | 523 ± 287   | 0.000   |
| Calcium intake /1000 kcal | 303 ± 131   | 274 ± 109   | 0.180   | 222 ± 84       | 242 ± 106   | 0.256   | 263 ± 117       | 258 ± 109   | 0.010   |
| Calcium intake /kg | 13 ± 8          | 11 ± 6      | 0.093   | 9.4 ± 5         | 8.7 ± 5     | 0.449   | 11 ± 7          | 10 ± 5      | 0.081   |
| Ratio calcium/protein | 9.3 ± 3.5     | 9.3 ± 3.7   | 0.953   | 7.9 ± 3        | 8.5 ± 3.2   | 0.280   | 8.6 ± 3        | 8.9 ± 3     | 0.510   |
Costa Rican teenagers between the ages of 13-18 years showed that 80% reported a dietary calcium intake of less than 1000 mg/d. At the time of the study, the recommended calcium intake for this age group was 1300 mg/d. The study revealed that the lowest levels of calcium intake were in females and those living in rural areas. Table 1 illustrates the findings for calcium intake for the adolescents participating in the study.

**PREVENTION, EDUCATION, LEVEL OF AWARENESS**

Osteoporosis is not recognized as a major health problem and there are currently no government public awareness programmes covering prevention, diagnosis or management of osteoporosis. However, the Social Security System has an education programme targeting prevention and treatment of chronic diseases such as osteoporosis. Physician guidelines are available (Guía para la Prevención, Diagnóstico y Tratamiento de la Osteoporosis, año 2000; Guía para el Aborde Integral del Climaterio, Menopausia y Osteoporosis año 2010). There is no governmental health professional training and there are currently no approved governmental guidelines for osteoporosis treatment or prevention.

Patient support groups do exist in Costa Rica. Public health awareness programmes are supported via websites, advertisements, and public lectures. The ACCMYO actively organizes public lectures and participates in radio and televised educational programmes for osteoporosis. Each year, during World Osteoporosis Day, many activities are organized for the public. In 2011, over 800 participants attended this international event. Educational programmes are also organized during Menopause Day. The Costarican Osteoporosis Foundation also organizes activities to educate the general public. Pharmaceutical companies also promote awareness of osteoporosis through their support of the ACCMYO at congresses and assistance with distribution of the osteoporosis guidelines and educational materials.

Data on public awareness around osteoporosis in Costa Rica are not available. Health professionals in the public sector are poorly equipped to diagnose and treat osteoporosis whereas those in the private sector are well-equipped. Osteoporosis training is integrated into educational programmes, but only into medical school training for endocrinologists and rheumatologists. Allied health professionals are, in general, poorly trained in caring for patients with osteoporosis.

**RECOMMENDATIONS**

- Actions are needed to include osteoporosis training in nursing and medical school programmes.
- A call to conscience to government leaders about the economic importance of preventing fractures and about the population’s right to receive adequate care.
- More epidemiological studies are needed to be able to better understand the scope of the problem.
- Involve our political leaders in establishing national strategies for prevention, diagnosis and treatment of this disease.

**REFERENCES**

1. ACCMYO, 2010 data on file
3. US Census Bureau, International Data Base, 2011