



REVIEW OF STUDIES ON ECONOMIC EVALUATION OF TREATMENT OF OSTEOPOROSIS POSTMENOPAUSAL



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Introduction

- **The use of economic evaluation studies**
 - to support decision-making on health policies
 - incorporating new technologies
 - The development of guidelines for health

- **Therapeutic strategies of osteoporosis**
 - Effectiveness
 - Costs



Objectives

- **To do a complete review of economic evaluations, focusing on the treatment of postmenopausal osteoporosis, conducted in Brazil and abroad**



Methods

- **Search**
 - PubMed
 - National scientific journals
- **End date: August 2010**
- **Software**
 - Reference manager version 11.0
- **Keywords**

{osteoporosis} and

{postmenopausal or post-menopausal} and

{cost effectiveness or cost benefit or cost utility or
Economic Evaluation}



Methods

- **Inclusion criteria**
 - Economic evaluation (cost-effectiveness, cost-benefit or cost-utility)
 - Postmenopausal osteoporosis population
 - Drugs for postmenopausal osteoporosis
- **Exclusion criteria**
 - Osteoporosis after breast cancer
 - Osteopenia
 - Incomplete economic evaluation
 - Screening strategies comparison

Methods

- **Titles and abstracts analysis**
 - 2 reviewers
 - Discordant: 3^o reviewer
- **Analysis of results**
 - Local
 - Year of study
 - Perspective
 - Currency
 - Discount rate
 - Target population
 - Intervention
 - Conflicts of interest
 - Incremental cost effectiveness ratio (ICER)

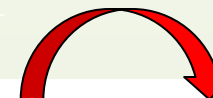
Results

Initial search: 102 titles and abstracts

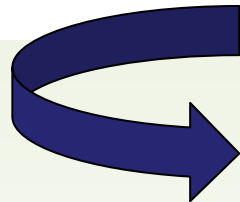
 Exclude: 66 titles


Subtotal: 36

2nd selection: 5

 Exclude: 21 abstracts


Total: 20



Results

- **Great variability in the methods**
 - country (demographic and epidemiological)
 - Perspective
 - Prices
 - valuation of health states by population
 - economic modeling
- **Comparison of treatment strategies with no treatment**
 - ICER reasonable, according to the WTP of each country



Results

- **More cost-effective**
 - increasing age
 - decreased bone mineral density (BMD)
 - presence of previous fractures

Results

BIPHOSPHONATES

- In general, biphosphonates were the most valued and the strategies that resulted in better ICER's
- Good effectiveness and threshold within of WTP of each country
 - Rosner et al (1998)
 - Iglesias *et al* (2002)
 - Johnell *et al* (2003)
 - Stevenson *et al* (2005)
 - Borgstrom *et al* (2006)
 - Liu et al (2006)
 - Strom et al (2007)
 - Grima *et al* (2008)
 - Araújo *et al* (2008)
 - Tosteson *et al* (2008)

Results

BIPHOSPHONATES – cont.

- **ICER exceed the WTP of country**
 - *Kanis et al (2004)*
- **Questioned the use of these drugs considering efficiency criteria due to scarce resources**
 - *Silva (2003)*

Results

TERIPARATIDE

- **Not cost-effective**
 - Stevenson *et al* (2005)
 - Tosteson *et al* (2008)
- **Not cost-effective alone**
 - Liu *et al* (2006)
- **Cost-effective only for population with osteoporosis previous fracture with BMD t-score -3 after 69 years old**
 - Lundkkvist *et al* (2006)

Results

HORMONE REPLACEMENT THERAPY

- **Good ICER, but called attention to the increased risk of breast cancer**
 - Rosner *et al* (1998)
 - Silva *et al* (2003)
 - Lekander *et al* (2008)

Results

VITAMIN SUPPLY: calcitriol

- **cost-effective when compared to “no treatment”**
 - Willis et al (2002)
- **better ICER**
 - Silva et al (2003)



Results

STRONTIUM RANELATE

- **was cost-effective for aging group with previous fractures**
 - Borgstrom *et al* (2006)
 - Strom *et al* (2007)
 - Hiligsmann *et al* (2010a)
 - Hiligsmann *et al* (2010b)

RALOXIFENE

- **cost-effective**
 - Borgstrom *et al* (2004)
 - Stevenson *et al* (2005)

Results

DENOSUMAB

- **new drug that is not available for commercialization**
— Hiligsmann; Reginster (2010)



Conclusion

- **There was no possibility to extrapolate the results to the population of Brazil, limiting its use to decision makers in different locations. The two studies conducted in Brazil are limited.**
- **Studies are needed in this area focusing on the Brazilian population to support decision makers in the public sector.**



Support



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