



Treatment Patterns for Osteoporosis Medications in Five European Countries: a Multinational Real World Cohort Analysis

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Background

- Osteoporosis causes weakened bones and can increase risk of fragility fracture.
- Osteoporosis affects 1 in 3 women and 1 in 5 men over the age of 50.

Methods

Design: Multinational real world cohort study

Setting: 5 routinely collected databases throughout Europe

1. CPRD (Clinical practice research datalink – UK)

- Throughout Europe, alendronate is the first-line treatment for the treatment of osteoporosis.
- However, the proportion of new users using alendronate and other osteoporosis medications is unknown.
- Also, how patients switch between different treatments is unknown.

Objectives

- Describe the patterns of use of different osteoporosis medications in five European countries.
- Describe the switching between osteoporosis medications in the 2 years after starting treatment in five European countries.

Results

Medication	CPRD, UK	SIDIAP, Spain	IPCI, Netherlands	HSD, Italy	NDR, Denmark
Total	2,740	34,826	11,039	10,757	38,141
Alendronate	2,375 (86.7%)	20,667 (59.3%)	6,602 (59.8%)	5,594 (52.0%)	31,857 (83.5%)
Other oral BP	238 (8.7%)	2,974 (8.5%)	2,316 (21.0%)	2,652 (24.7%)	664 (1.7%)
Intravenous BP	45 (1.8%)	651 (1.9%)	822 (7.4%)	747 (6.9%)	561 (1.5%)
Denosumab	75 (2.7%)	7,883 (22.6%)	1,234 (11.2%)	1,349 (12.5%)	3,698 (9.7%)
Teriparatide	0 (0.0%)	1 <i>,</i> 954 (5.6%)	51 (0.5%)	364 (3.4%)	1,346 (3.5%)

14 (0.1%)

51 (0.5%)

35 (0.1%)

- 2. SIDIAP (Sistema d'Informació per al Desenvolupament de la Investigació en Atenció Primària – Catelan, Spain)
- 3. HSD (Health Search Database Italy)
- 4. IPCI (Integrated Primary Care Information Project Netherlands)
- 5. NDR (National Danish registries Denmark)
- **Participants:** new users of osteoporosis medications aged 18+

Osteoporosis medications:

- Alendronate [ALN]
- Other oral bisphosphonates [OBP] (ibandronate/risedronate)
- Intravenous bisphosphonates [IVPB] (ibandronate/zoledronate)
- Denosumab [DENO]
- Teriparatide [TERI]
- Selective Estrogen Receptor Modulators [SERMS] (raloxifene, bazedoxifene and \bullet lasofozifene)

Study period: 1/1/2018 to most recent dataset (1/1/2016 – 31/12/2017 for NDR)

Statistical methods:

- 1. Proportions of patients starting each medication
- 2. Key descriptive characteristics

Table 1: n and % of each medication in each database

7 (0.2%)

 The most common osteoporosis medication was alendronate, then denosumab (Table 1)

697 (2.0%)

- Mean age was 71 (HSD, IPCI) 74 (CPRD)
- 76% (IPCI) 90% (HSD) female

SERMS

- 39% (CPRD) 62% (HSD) with diagnosis of osteoporosis
- Small proportions of patient switched treatments (1.6 % (NDR) -6.2% (IPCI). 1.3 – 4.2% within 6 months.
- By 2 years, majority of patients were censored and large proportion stopped by 18m.



• At 6 months < 80% of patient were persistent to alendronate



Sankey diagrams of switching 3.



CEN





Conclusions

The majority of patients first use alendronate to treat osteoporosis,

followed by other oral bisphosphonates and denosumab.

<10% of patients switch treatments within 2 years.

However, quite a larger proportion stop treatment without starting a

new osteoporosis treatment.

At 6 months, <80% patients remained on alendronate treatment among those who initiated alendronate.

Further research into the persistence and switching of

osteoporosis medication use is needed







