

## Clinical Rheumatology

# Disease burden and costs for patients with hip and knee osteoarthritis and chronic moderate-to-severe refractory pain on treatment with strong opioids in Spain

## SUPPLEMENTARY MATERIAL

Table S1. Unit costs and work disability (2018).

Health and non-health resources	Unit costs (€)
Medical visits	
Primary care medical visit	23.2
Emergency medical visit	117.5
Hospitalization (one day)	480.9
Specialized care medical visit	92.5
Rehabilitation session	156.0
Visit to the pain clinic	185.0
Complementary tests	
Laboratory tests	22.3
Conventional radiology	18.5
Other diagnostic/therapeutic tests	37.1
Computed tomography	96.0
Magnetic nuclear resonance	177.0
Pharmaceutical prescription	Retail price
Work disability - Indirect costs	
Cost per day not worked	101.2

Sources: hospital accountability and INE[30].

INE: Instituto Nacional de Estadística.

Table S2. Health resource use in the total sample and according to type of opioid.

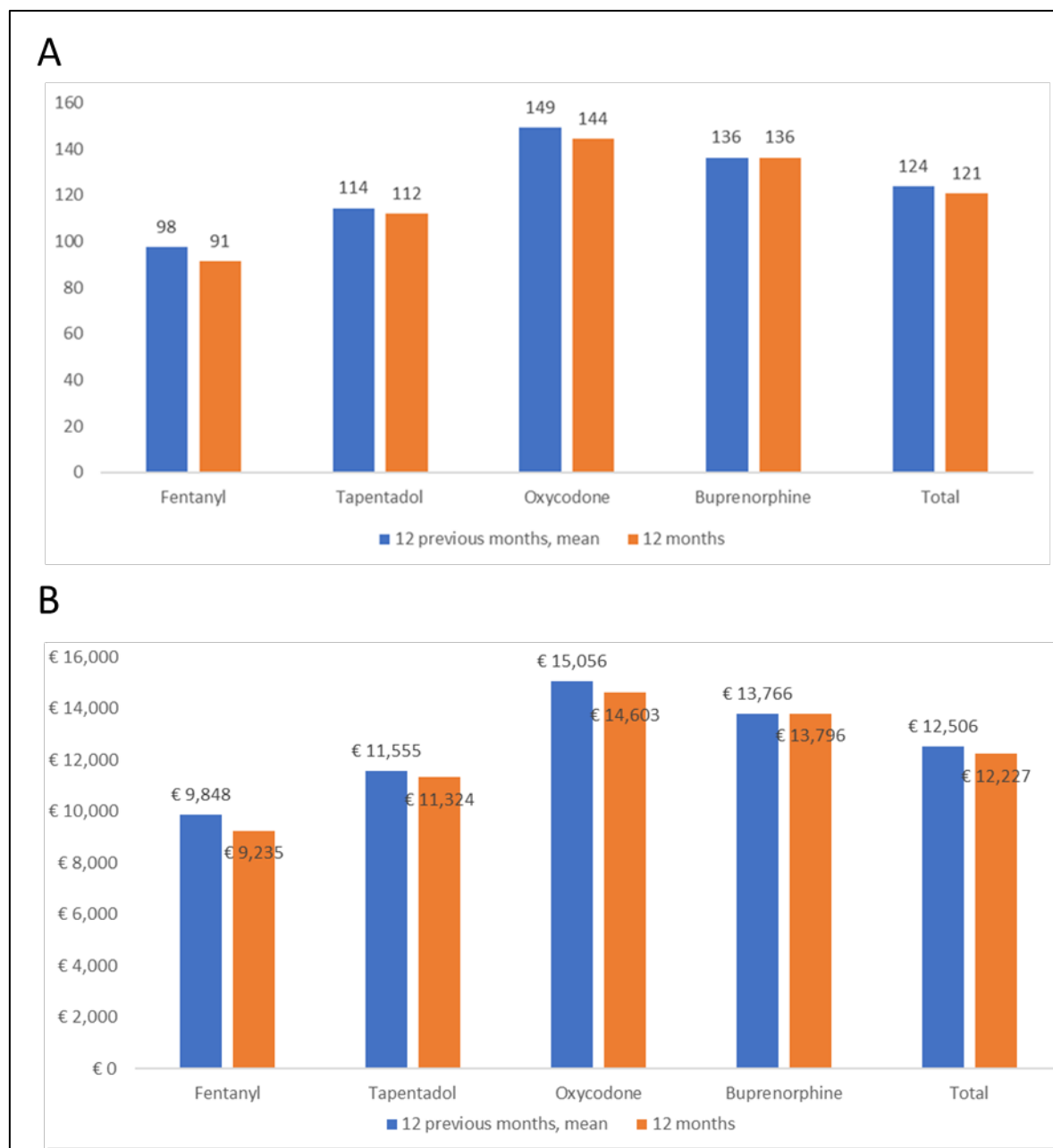
Study groups	Fentanyl	Tapentadol	Oxycodone <sup>a</sup>	Bupren.	p	Total
Number of patients, %	979	625	572	425		2832
<b>12 months pre-opioid</b>						
Primary care visits	10.5 (15.9)	21.2 (20.5)	19.2 (20.3)	18.1 (19.2)	<0.001	19.7 (20.6)
Lab tests	0.6 (0.9)	1.0 (1.3)	1.1 (1.5)	1.0 (1.4)	0.047	1.1 (1.4)
Conventional radiology	0.8 (1.3)	1.5 (1.6)	1.5 (1.6)	1.3 (1.4)	0.001	1.4 (1.6)
Axial tomography	0.2 (0.8)	0.5 (1.2)	0.4 (1.2)	0.3 (1.0)	0.031	0.4 (1.1)
MNRI	0.1 (0.2)	0.2 (0.4)	0.1 (0.3)	0.1 (0.3)	0.001	0.1 (0.3)
Rehabilitation sessions	0.0 (0.0)	0.2 (1.4)	0.1 (0.9)	0.1 (0.7)	<0.001	0.1 (0.9)
Pain clinic session	0.4 (1.1)	1.0 (1.5)	0.9 (1.5)	0.8 (1.4)	0.004	0.9 (1.4)
Other complementary tests	0.3 (0.7)	0.8 (1.0)	0.7 (1.0)	0.6 (1.0)	<0.001	0.7 (1.0)
Specialist visits	0.9 (3.7)	2.5 (5.2)	2.1 (5.0)	1.5 (4.7)	0.004	2.0 (5.2)
Hospital emergency visits	0.4 (0.8)	1.3 (1.2)	1.2 (1.7)	1.4 (3.4)	0.078	1.2 (2.7)
Hospital stays (days)	1.1 (3.1)	2.0 (4.0)	1.8 (4.1)	1.3 (3.4)	0.009	1.6 (3.8)
<b>12 months post-strong opioid initiation</b>						
Primary care visits	12.2 (16.4)	17.9 (19.6) <sup>‡</sup>	17.9 (19.7) <sup>†</sup>	14.7 (17.4)	0.003	17.4 (19.6) <sup>‡</sup>
Lab tests	0.6 (0.9)	0.9 (1.3)	0.9 (1.3) <sup>‡</sup>	1.0 (1.5)	0.146	1.0 (1.4) <sup>‡</sup>
Conventional radiology	0.9 (1.4)	1.6 (1.6) <sup>‡</sup>	1.5 (1.6) <sup>‡</sup>	1.3 (1.5)	0.001	1.5 (1.6) <sup>‡</sup>
Axial tomography	0.2 (0.8)	0.6 (1.2) <sup>‡</sup>	0.5 (1.1) <sup>*</sup>	0.3 (0.8)	<0.001	0.4 (1.1) <sup>‡</sup>
MNRI	0.1 (0.6)	0.4 (0.8) <sup>‡</sup>	0.3 (0.7) <sup>‡</sup>	0.2 (0.6)	<0.001	0.3 (0.8) <sup>‡</sup>
Rehabilitation sessions	0.0 (0.0)	0.3 (1.4)	0.2 (1.3)	0.2 (1.6)	0.001	0.1 (1.1)
Pain clinic sessions	0.6 (1.2)	1.1 (1.4)	1.1 (1.6) <sup>‡</sup>	0.9 (1.5)	0.013	1.0 (1.5) <sup>‡</sup>
Other complementary tests	0.4 (0.9) <sup>*</sup>	0.8 (1.1) <sup>‡</sup>	0.8 (1.1) <sup>†</sup>	0.6 (0.9)	0.015	0.7 (1.1) <sup>‡</sup>
Specialist visits	2.1 (4.3) <sup>‡</sup>	3.9 (7.3) <sup>‡</sup>	3.2 (7) <sup>‡</sup>	2.0 (5.2)	<0.001	2.9 (7) <sup>‡</sup>
Hospital emergency visits	1.9 (2.3) <sup>‡</sup>	1.6 (1.7) <sup>‡</sup>	1.7 (3.7) <sup>‡</sup>	1.5 (2.5)	0.259	1.6 (3) <sup>‡</sup>
Hospital stays (days)	1.3 (2.4)	2.5 (7.2) <sup>†</sup>	2.3 (6.9)	1.1 (4.9)	<0.001	1.9 (6.3) <sup>†</sup>
<b>36 months follow up</b>						
Primary care visits	29.5 (9.9)	32.9 (10.3)	33.2 (10.1)	32.8 (10.3)	0.070	32.8 (10.3)
Lab tests	1.9 (2.2)	2.6 (2.9)	2.7 (2.8)	2.8 (3.2)	0.210	2.6 (3.1)
Conventional radiology	1.3 (1.4)	1.8 (2)	1.5 (1.8)	1.8 (1.9)	0.003	1.6 (1.8)
Axial tomography	0.3 (0.7)	1.4 (2.3)	1 (1.8)	0.7 (1.6)	<0.001	1 (2)
MNRI	0.3 (1.3)	1 (2.2)	1 (2.6)	0.5 (1.6)	<0.001	0.8 (2.1)
Rehabilitation sessions	0 (0)	0.6 (2.8)	0.2 (1.5)	0.4 (2.5)	<0.001	0.3 (2)
Pain clinic sessions	1.4 (1.5)	2.2 (1.3)	2.2 (1.4)	2.1 (1.4)	<0.001	2.1 (1.4)
Other complementary tests	1.3 (1.3)	1.9 (1.3)	1.8 (1.3)	1.8 (1.3)	0.003	1.8 (1.3)
Specialist visits	2.7 (9.3)	7.9 (17.2)	7.6 (20.1)	4.5 (10.1)	<0.001	6.3 (15.3)
Hospital emergency visits	2.4 (3)	2.9 (2.6)	2.8 (4.1)	3.1 (4.5)	0.568	3 (4.3)
Hospital stays (days)	7.7 (16.1)	8.4 (16.8)	7.4 (15.9)	5.4 (13.5)	<0.001	6.6 (15.2)
Surgical interventions <sup>1</sup> , %	15.0%	15.3%	15.3%	15.8%	<0.001	15.2%

<sup>1</sup>Includes outpatient minor surgery and surgery with hospitalization > 24 hours (arthroscopy, arthroplasty, etc.). Values expressed as mean (SD: standard deviation) or %. \*p<0.05; †p<0.01; ‡p<0.001 vs. 12 months pre-opioid initiation, not significant when not indicated.

<sup>a</sup>Oxycodone patients included those receiving a combination of oxycodone + naloxone (85.7%) while others (14.3%) were on treatment with oxycodone alone.

Bupren.: buprenorphine; MNRI: Magnetic nuclear resonance imaging.

Figure S1. Sick leaves (graph A) and indirect cost (graph B) in active workers with osteoarthritis and chronic pain by type of strong opioid drug, individually and overall.



<sup>a</sup>Oxycodone patients included those receiving a combination of oxycodone + naloxone (85.7%) while others (14.3%) were on treatment with oxycodone alone.