

Assessment of Direct, Indirect, and Intangible Costs of Rheumatoid Arthritis in Patients Receiving Biological Therapy in Morocco: ECORAM Study

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Objectives

The present study aims to estimate the annual direct and indirect, and intangible costs of rheumatoid arthritis (RA) among patients with biological therapy in Morocco from the societal perspective and, to identify factors affecting the increase of these costs.

Methods

This is an observational and ambispective study, conducted in 110 patients with RA and under biotherapies from July 2019 until October 2020. The data collection was done by face-to-face interviews using a questionnaire. Indirect costs, including productivity loss and formal care, and intangible costs such as the cessation of physical and leisure activities, Formal care, and divorce or remaining single until menopause for women due to the disease were reported. Additional information was obtained from the patient’s files.

Results

Patients had a mean age of 50.5 years, and there was predominance of women. Annual average total direct costs were \$7,659, primarily driven by medical expenses (98%). Numerous sociodemographic factors drive and influence the direct costs associated with RA.

Table1: Demographic factors distribution (Age & BMI)

	Mean ± SD	Min – Max
N(110)		
Age	50,53 ± 13,86	19 – 73
BMI	22,04 ± 4,47	14 – 37

Figure 1: Gender distribution

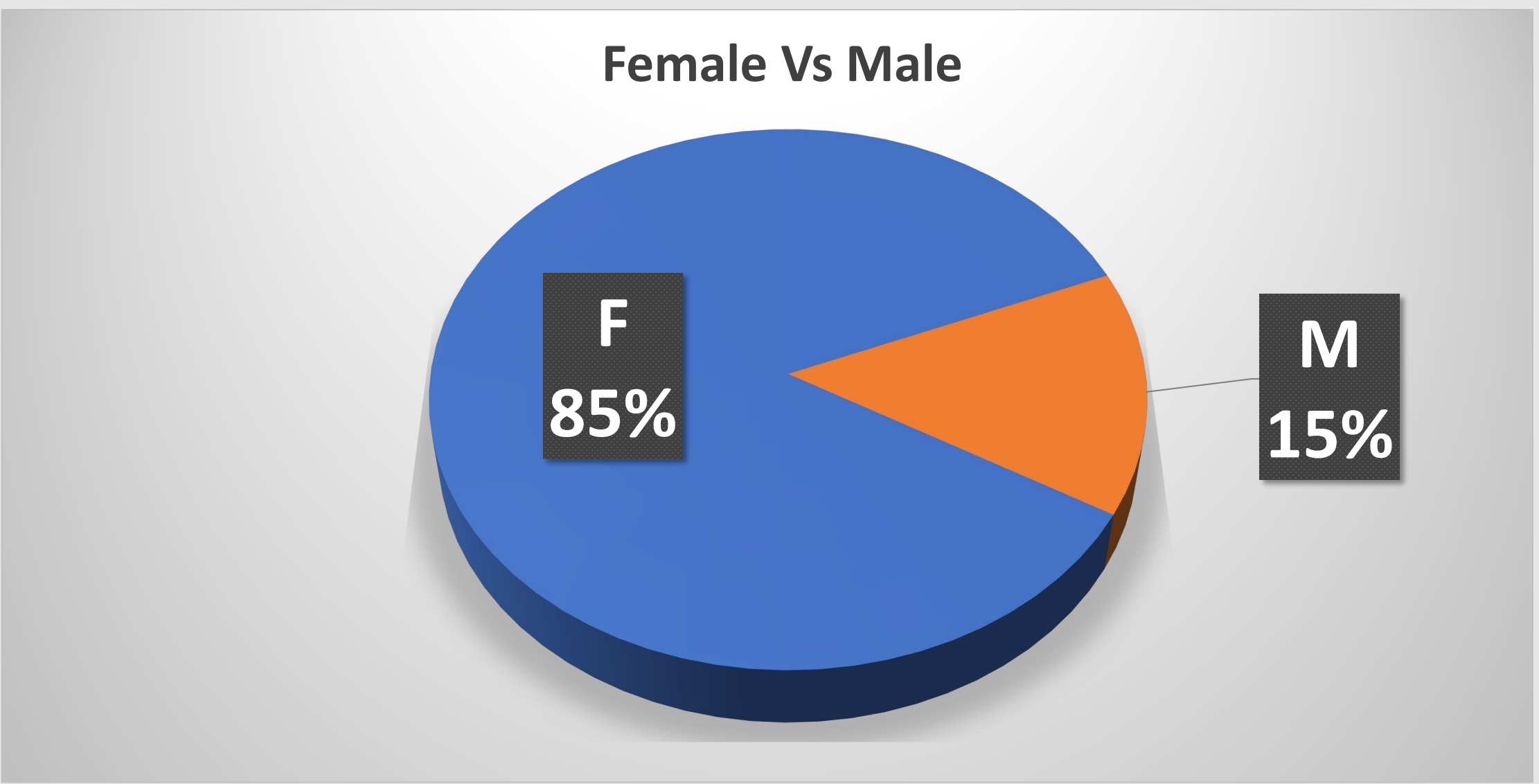
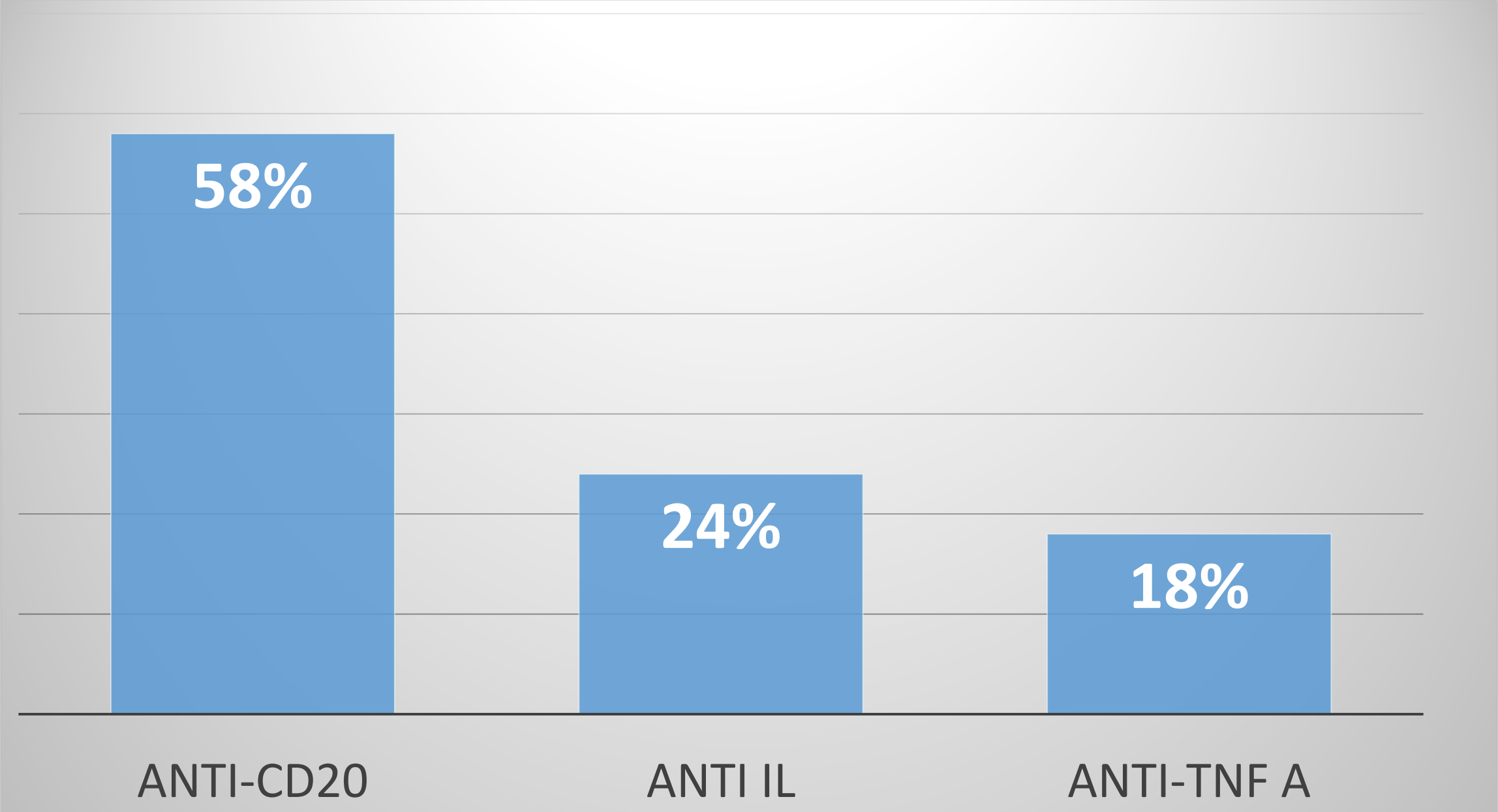


Table2: Annual Direct Costs

Annual direct costs (USD)		
	Mean ± SD	Median [25 ;75]
DMARD	195.26±13 7.4	222 [85 ; 254.57]
BDMARD	4,944.73± 5,211.25	1,834.1 [1,160 ; 8,364.9]
Other Medications	253.6 ± 226.8.	174.4 [111.9 ; 310.32]
Total Cost*	7,659.04 ±5,893.12	4,992.5 [2,969.37; 11,124.35]
* The total cost includes hospitalization, consultations, radiological and biological assessments, surgery, physiotherapy, and transportation.		

Note: The currency used is USD. The exchange rate applied is 1MAD≈0.0985 USD, (without adjusting for inflation)

Figure 2 : Patient’s distribution by BDMARDs Type



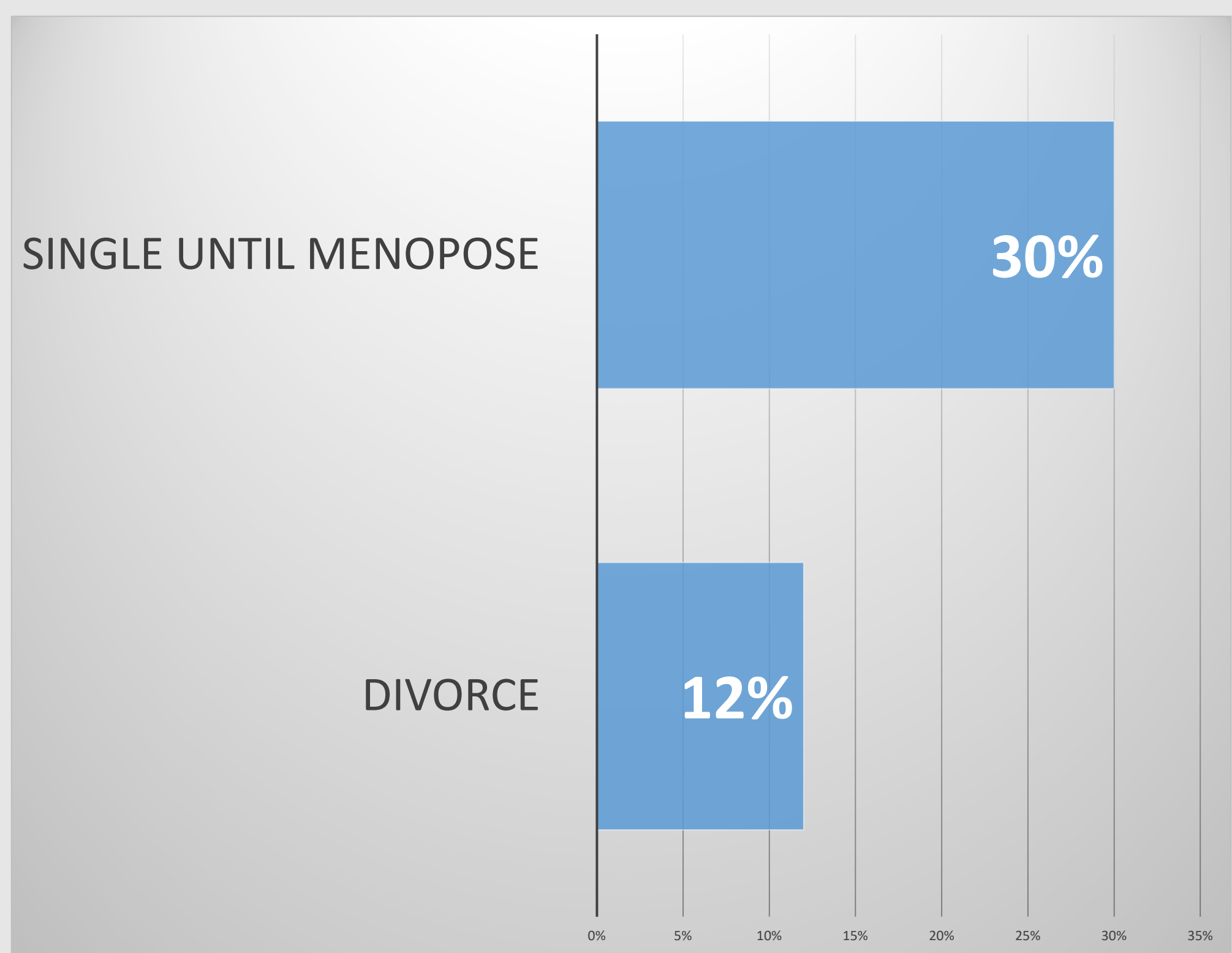
Direct costs of RA were significantly driven by sociodemographic factors, marital status ($p=0.018$), number of children ($p=0.009$), employment status ($p=0.005$), monthly household income ($p=0.001$), and type of medical insurance ($p=0.000$). Furthermore, the type of BDMARD was found to have the most significant impact on total direct costs among the clinical factors ($p=0.000$).

Table 3: Indirect Costs
Productivity loss & formal care

	Annual costs		
	Mean ± SD	Median 25 ;75	Min-Max
Salary Loss	2337.73 ±1649.80	1800 1440;2760	6000 - 96300
Formal care expenses	421.84 ± 261.34	300 300 ; 510	252 - 1200

For those experiencing salary loss, the annual average cost was \$2,337.73 ± \$1,649.80. Only 13 patients reported formal care expenses, averaging \$421.84 ± \$261.34. Statistical analysis revealed gender ($p=0.028$), disease duration ($p=0.037$), and cessation of sport/leisure activities ($p=0.009$) significantly impacting the annual lost salary.

Figure 2: Intangible Costs among women



Conclusion

The overall burden of RA is substantial encompassing medical direct costs, productivity loss, caregiver costs, and notable intangible consequences like divorce and spinsterhood. These findings can inform strategies for enhanced governance of RA in Morocco and similar nations.

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