

Short Communication

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## A short communication about the article “Assessment of the length of sick leave in patients with ischemic heart disease”

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### Article Info

#### Article Notes

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#### Keywords

Acute Coronary Syndrome  
Ischemic Heart Disease

### Background

Ischemic heart disease (IHD) is particularly important in our environment due to its high prevalence, the high consumption of resources it requires, and the associated mortality. The increase in its prevalence and advances in technology have established IHD as the disease with the greatest economic impact in the developed countries<sup>1,2</sup>. In recent decades, mortality rates after IHD have declined in developed countries, but IHD nonetheless remains the leading cause of death in men and the second most frequent in women<sup>1,3</sup>. Incapacity for work is one of the indirect costs of the disease, but this issue has not been widely studied<sup>1,2,4,5</sup>. Few authors have assessed the length of periods of sick leave due to IHD<sup>1,6-10</sup> since the review of the topic conducted in 2004 by Perk and Alexanderson<sup>1,11</sup>. The study by Sicras-Mainar in 2009 quantified the cost per patient following an episode of Acute Coronary Syndrome (ACS) at 14,069 euros (87% of which were direct costs and 13% lost productivity costs). The direct costs comprised primary care (20%) and specialized care (67%), with hospitalization costs accounting for 63% of the total<sup>1,4</sup>. Our aim is to determine the length of sick leave after an acute coronary syndrome, its costs, associated factors and to assess the use of antidepressants and/or anxiolytics<sup>1</sup>.

### Methods

An observational study of a retrospective cohort of patients on sick leave due to ischemic heart disease in a health region of Catalonia, Spain, between 2008–2011, with follow-up until the first return to work, death, or end of the study (31/12/2012). Measurements: length of sick leave, sociodemographic variables and medical prescriptions. Data were obtained from the electronic medical record database of the primary care section (ECAP) of the Catalan Health Service and from the pharmacy billing databases run by CatSalut<sup>1</sup>.

The duration of sick leave was estimated by Kaplan-Meier survival analysis until the first medical discharge. The periods of sick leave were compared using the Log-Rank test, and at the multivariate level, hazards ratios were estimated by adjusting the Cox regression models. The assumption of proportional risks

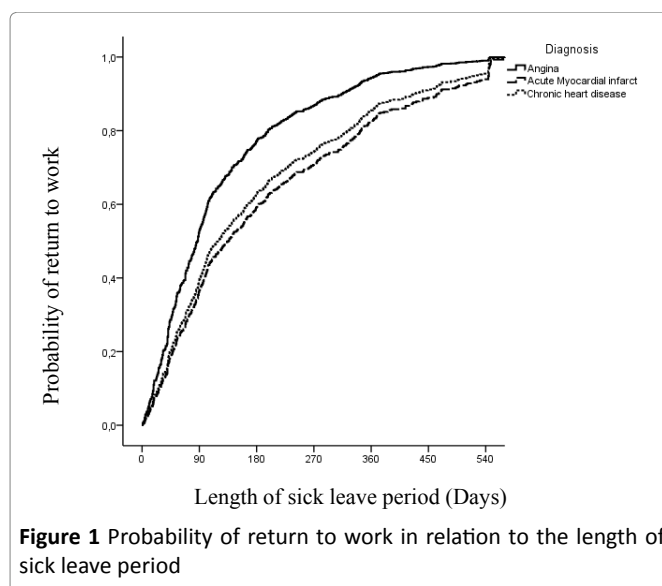
of the Cox models was evaluated using the Schofield residuals<sup>1</sup>.

Indirect costs were those relating to productivity loss (number of periods of sick leave and total days off work). They were quantified according to the minimum wage (Source: Spanish Institute of Statistics), considering the cost per day not worked at 54.65 euros<sup>1,4</sup>. Indirect costs were estimated for the whole of the patients' follow-up period<sup>1</sup>.

### Results

Four hundred and ninety-seven patients (mean age 53 years, 90.7% male), diagnosed with acute myocardial infarction (60%), angina pectoris (20.7%) or chronic form of ischemic heart disease (19.1%). Thirty-seven per cent of patients took anxiolytics the year after diagnosis and 15% took antidepressants (Table 1). The average duration of sick leave was 177 days (95% CI: 163–191 days). Patients diagnosed with acute myocardial infarction returned to work after a mean of 192 days, compared to 128 days in cases with angina pectoris (Fig.1). Patients who took antidepressants during the year after diagnosis returned to work after a mean of 240 days (Table 2). Table 3 shows the

multivariate analysis of the hazards ratios for returning to work depending on the variables analysed. The mean work productivity loss was estimated to be 9,673 euros/person<sup>1</sup>.



**Table 1:** Descriptive data of the variables analysed

Variables	N	%
Diagnostic code (CIE10) and description		
Angina (I20)	103	20.70%
Acute myocardial infarct (AMI) (I21)	295	59.40%
Complications following AMI (I23)	1	0.20%
Other acute ischemic heart disease (I24)	3	0.60%
Chronic ischemic heart disease (I25)	95	19.10%
Age group		
<=45 years	88	17.70%
46 to 55	195	39.20%
>=56	214	43.10%
Year of sick leave		
2008	142	28.60%
2009	117	23.50%
2010	112	22.50%
2011	126	25.40%
Sex		
Female	48	9.70%
Male	449	90.30%
Medication dispensed : Yes/No ATC code		
Prior sedative (N03AE N05BA-BB-BX-CD-CF-CM)		
Previous	136	27.4%
Previous 6 months	73	14.7%
Previous 12 months	95	19.1%
Subsequent 12 months	184	37.0%
Antidepressants GT=N06A / N06B / N06C		
Previous	74	14.9%
Previous 6 months	30	6.0%
Previous 12 months	39	7.8%
Subsequent 12 months	76	15.3%

**Table 2:** Estimated time in days of the overall period of sick leave according to group

Variable	Mean	95% CI		Median	95% CI		p-value
		(Upper limit - Lower limit)	(Upper limit - Lower limit)				
Global	177.3	(163.5- 191.0)		116	(98.6- 133.4)		
Diagnostic code (CIE10) and description							0.002
Angina (I20)	127.8	(99.9- 155.6)		68	(46.6- 89.4)		
Acute Myocardial Infarction (I21)	191.8	(174.1- 209.5)		131	(102.1- 159.9)		
Other acute ischemic heart disease (I24)	143.0	(47.8- 238.2)		187	(0.0- 412.6)		
Chronic ischemic heart disease (I25)	187.7	(154.5- 220.9)		137	(105.7- 168.3)		
Age group (in years)							0.042
<=45 years	139.7	(110.2- 169.2)		88	(56.7- 119.3)		
46 to 55	184.4	(161.7- 207.1)		125	(98.4- 151.6)		
>=56	186.1	(165.2- 207.1)		137	(103.4- 170.6)		
Sex							0.221
Female	152.5	(110.7- 194.3)		99	(62.8- 135.2)		
Male	179.9	(165.3- 194.5)		119	(101.0- 137.0)		
Previous medication							
Previous sedative (N03AE N05BA-BB-BX-CD-CF-CM)	Si	189.6	(162.7- 216.6)	126	(80.3- 171.7)		0.35
	No	172.4	(156.5- 188.4)	112	(93.5- 130.5)		
Sedative in previous 12 months (N03AE N05BA-BB-BX-CD-CF-CM)	Si	208.4	(173.8- 243.0)	160	(84.5- 235.5)		0.045
	No	169.7	(154.9- 184.5)	111	(95.1- 126.9)		
Previous antidepressants: GT=N06A / N06B / N06C	Si	181.3	(146.5- 216.1)	137	(90.2- 183.8)		0.577
	No	176.5	(161.5- 191.4)	111	(93.6- 128.4)		
Antidepressants in previous 12 months : GT=N06A / N06B / N06C	Si	228.9	(174.0- 283.8)	191	(105.3- 276.7)		0.022
	No	172.8	(158.7- 186.9)	110	(92.7- 127.3)		
Subsequent medication (12 months)							
Sedatives	Si	199.3	(175.6- 223.0)	150	(113.5- 186.5)		0.015
	No	164.2	(147.5- 180.9)	103	(88.9- 117.1)		
Antidepressants	Si	240.2	(199.3- 281.1)	196	(133.0- 259.0)		<0.001
	No	165.9	(151.6- 180.2)	108	(93.1- 122.9)		

**Table 3:** Estimation of Hazard Ratio (HR) of return to work in relation to the variables analysed using the Cox regression model

Variable	Category	HR*	95%CI		p-value
			(Lower level - Upper level)	(Lower level - Upper level)	
Sex	Female	1.36	(1.00- 1.86)		0,051
Age in years		0.99	(0.97- 1.00)		0.025
Diagnosis (Ref: Chronic ischemic heart disease)					<0.001
	Angina (CIE10:I20)	1.49	(1.12- 1.98)		0.006
	Acute myocardial infarct (CIE10:I21)	0.91	(0.71- 1.15)		0.421
Medication previous 12 month (Ref: None)					
	Sedative (N03AE N05BA-BB-BX-CD-CF-CM)	0.88	(1.08- 0.72)		0.217
	Antidepressants GT=N06A / N06B / N06C	0.64	(0.84- 0.48)		0.002

## Conclusions

The mean duration of sick leave due to ischemic heart disease in our health region was almost six months. Consumption of psychotropic medication doubled after the event. Older age, suffering an acute myocardial infarction and taking antidepressants were associated with a longer sick leave period<sup>1</sup>.

## Conflict of interest statement

The authors declare that they have no competing interests.

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