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# Original article

# Pre-Surgical Period and Non-work-related Sickness Absence due to Inguinal Hernia<sup>☆</sup>

Montserrat Ruiz-Moraga,<sup>a</sup> Carlos Catalina-Romero,<sup>a,\*</sup> Paloma Martínez-Muñoz,<sup>a</sup> Maria Dolores Cobo-Santiago,<sup>a</sup> Maite González-López,<sup>a</sup> Martha Cabrera-Sierra,<sup>a</sup> José Luis Porrero-Carro,<sup>b</sup> Eva Calvo-Bonacho<sup>a</sup>

<sup>a</sup> Ibermutuamur (Mutua de accidentes de trabajo y enfermedades profesionales de la Seguridad Social no. 274), Madrid, Spain <sup>b</sup> Servicio de Cirugía General y Aparato Digestivo, Hospital Universitario Santa Cristina, Madrid, Spain

#### ARTICLE INFO

Article history: Received 26 June 2012 Accepted 28 November 2012 Available online 24 April 2014

Keywords: Inguinal hernia Sick leave Health management

#### ABSTRACT

Background and objective: To analyse non-work-related sickness absence (NWR-SA) due to inguinal hernia and the factors related to its duration, paying particular attention to the presurgical period of NWR-SA.

Materials and methods: A prospective cohort study was conducted on 1003 workers with an episode of NWR-SA due to an inguinal hernia, belonging to the insured population of a mutual insurance company. We assessed the duration of the NWR-SA episodes and the main demographic, occupational and clinical variables potentially related to it. Cox regression analyses were conducted to establish the predictors of NWR-SA duration.

Results: The mean duration of NWR-SA due to inguinal hernia was 68.6 days. After multivariate analysis (Cox regression), having a pre-surgical period of NWR-SA (HR=0.35; 95%CI, 0.28–0.43), manual occupations (HR=0.68; 95%CI, 0.49–0.95), construction sector (HR=0.71; 95%CI, 0.58–0.88), direct payment methods by a Mutual Insurance Company during sick leave in self-employed workers (HR=0.58; 95%CI, 0.41–0.82), or employees (HR=0.51; 95%CI, 0.36–0.72), comorbidity (HR=0.45; 95%CI, 0.34–0.59), and surgery performed under an entity other than the Public Health System or a Mutual Insurance Company (HR=0.76; 95%CI, 0.59–0.97) was associated with longer NWR-SA. With a Mutual Insurance Company the surgery was always performed with a pre-surgery period of NWR-SA (mean duration=47 $\pm$ 39.6days); this was associated with shorter periods of post-surgical NWR-SA (P=.001).

Conclusions: The NWR-SA due to inguinal hernia is a multifactorial phenomenon in which the pre-surgery period plays an important role. The collaboration between organisations involved in the management of NWR-SA seems to be an effective strategy for reducing its duration.

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<sup>\*</sup> Please cite this article as: Ruiz-Moraga M, Catalina-Romero C, Martínez-Muñoz P, Cobo-Santiago MD, González-López M, Cabrera-Sierra M, et al. Periodo prequirúrgico y duración de la incapacidad temporal por contingencias comunes en la hernia inguinal. Cir Esp. 2014;92:269–276.

<sup>\*</sup> Corresponding author.

## Periodo prequirúrgico y duración de la incapacidad temporal por contingencias comunes en la hernia inguinal

RESUMEN

Palabras clave: Hernia inguinal Ausencia por enfermedad Gestión en salud Fundamento y objetivo: Analizar la incapacidad temporal por contingencias comunes (ITCC) debida a hernia inguinal y los factores relacionados con su duración, prestando especial atención al periodo pre-quirúrgico de ITCC.

Material y métodos: Estudio de una cohorte prospectiva de 1.003 trabajadores con un episodio de ITCC por hernia inguinal, pertenecientes a la población protegida de una mutua de accidentes de trabajo y enfermedades profesionales. Se evaluaron la duración de la ITCC y las principales variables demográficas, laborales y clínicas potencialmente relacionadas con esta. Se establecieron predictores de la duración de la ITCC mediante regresión de Cox. Resultados: La duración media de la ITCC por hernia inguinal fue de 68,6 días. Tras el análisis multivariante, tener periodo pre-quirúrgico de ITCC (HR = 0,35; IC 95%: 0,28-0,43), ocupaciones manuales (HR = 0,68; IC 95%: 0,49-0,95), sector Construcción (HR = 0,71; IC 95%: 0,58-0,88), modalidad de pago directo por la mutua en trabajadores por cuenta propia (HR = 0,58; IC 95%: 0,34-0,59) y realización de la cirugía por una entidad distinta del Sistema Público de Salud o la mutua (HR = 0,76; IC 95%: 0,59-0,97) se asociaron con bajas más largas. La mutua realizó la cirugía, siempre en presencia de periodo de ITCC pre-quirúrgica (duración media = 47  $\pm$  39,6 días); asociándose periodos de ITCC post-quirúrgica más breves (p = 0,001).

Conclusiones: La ITCC por hernia inguinal es un fenómeno multifactorial en el que el periodo pre-quirúrgico desempeña un papel importante. La colaboración entre entidades implicadas en la gestión de la ITCC parece resultar una estrategia efectiva para reducir su duración.

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#### Introduction

Temporary incapacity to work due to common contingencies (ITCC) is covered under our Social Security system to provide financial benefits to workers registered under the system who are temporarily unable to continue their work due to a nonwork-related health problem. Mutual insurance companies for work-related accidents and illnesses work with the Social Security to manage these benefits from the sixteenth day of sick leave for companies who opt for this setup,<sup>2</sup> offering their specialist resources to assess a worker's inability to work through periodic follow-up appointments and providing diagnostic tests or treatment to hasten a solution to the health problem and bring the worker back to work. These possibilities are particularly important as the healthcare resources of the public health system (SPS) are overburdened with general healthcare resulting in downtime as a consequence of unnecessary waiting during the ITCC process.<sup>3,4</sup>

Inguinal hernia is a common problem<sup>5</sup> and its surgical treatment is amongst the most frequent in general surgery.<sup>6</sup> Hernia repair usually causes periods of ITCC and rather than being considered a "simple procedure," it is now one which should be studied in depth in order to improve aspects such as the patient's return to work,<sup>7,8</sup> since the convalescence period is of considerable interest both socioeconomically and in terms of health management.<sup>6</sup> Several standards and recommendations have been suggested in this regard, but these vary significantly.<sup>9-11</sup>

Research to date suggests the return to work would be earlier after laparoscopy than after open surgery, <sup>8,9,12,13</sup> and amongst self-employed <sup>14</sup> and younger workers. <sup>13</sup> By contrast, manual occupations, <sup>13,15</sup> lower educational levels, <sup>15</sup> lower incomes, <sup>15</sup>

certain types of insurance coverage<sup>16</sup> and previous symptoms of depression<sup>15</sup> may be associated with longer periods of ITCC. Workers' expectations in relation to the sick leave have also been highlighted as a significant predictive factor.<sup>17</sup>

However, many of the abovementioned findings originate from socio-economical and cultural contexts which are different to our own<sup>8,9,13,16</sup> and focus exclusively on recovery after surgery. Factors in relation to the presurgical period, such as waiting list times,<sup>3</sup> have not as yet been researched.

The objective of this study was to analyse the duration of ITCC due to inguinal hernia and the factors relating to its duration, paying particular attention to the role of the presurgical period within the episode of ITCC.

#### Materials and Methods

This work formed part of a larger study about the duration of ITCC in relation to the most frequent illnesses and the factors predictive of its duration<sup>18</sup> which was undertaken amongst the protected population of a mutual insurance company for work-related accidents and illnesses that work with the Social Security. The study methodology has been widely described elsewhere.<sup>2,18,19</sup>

### Design

A prospective cohort and consecutive sampling design.

#### Subjects

The sample for this study comprised 1003 subjects who had started an episode of ITCC sick leave due to a diagnosis of

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