



## ORIGINAL ARTICLE

## Epidemiology and risk factors in injuries due to fall in infants under one year-old<sup>☆,☆☆</sup>

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**KEYWORDS**

Falls;  
Nursery equipment;  
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**Abstract**

**Objectives:** To describe the epidemiological characteristics of unintentional injuries due to falls in children under one year and to analyse the risk factors associated with severe injuries.

**Patients and methods:** This multicentre, observational and cross-sectional study included all children less than one year treated for unintentional fall in the Emergency Departments of 8 Spanish Hospitals, belonging to the ‘‘Unintentional Paediatric Injury Workshop’’ of the Spanish Paediatric Emergency Society, between March 1st, 2014 and February 28th, 2015.

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◇ The list of the participating hospitals can be found in [Appendix A](#).

**Results:** Out of 289,887 emergency department cases, 1022 were due to unintentional falls. The median age was 8 months and 52.5% were males. Fall injuries were more frequent among children aged 9–12 months (37.6%), and 83.5% occurred at home. The most common mechanism was fall from nursery equipment (69.4%), and 47.8% occurred from a height under 50 cm. More than two-thirds (68%) of falls were witnessed, but in half of the cases (329) the caregiver was not in area. Serious injuries were seen in 12% of cases. In this study, a fall height greater than 50 cm, falls in the street, from the arms of the carer, and from the stairs were identified as independent risk factors for worse outcomes.

**Conclusions:** The most serious injuries occur in children <3 months and from a height of >50 cm, though not related to unwitnessed falls. Because the most common serious injury mechanism is the fall from the arms of the carer, from stairs and falls in the street, these facts should be highlighted in order to avoid morbidity.

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## PALABRAS CLAVE

Caídas;  
Dispositivos  
infantiles;  
Factores de riesgo;  
Niños;  
Prevención

## Epidemiología y factores de riesgo de las lesiones por caídas en niños menores de un año

### Resumen

**Objetivos:** Describir las características epidemiológicas de las caídas en menores de un año y analizar los factores de riesgo asociados a las lesiones de mayor gravedad.

**Pacientes y métodos:** Estudio multicéntrico, observacional y transversal, de los niños menores de un año que acudieron por caídas a las Urgencias de 8 hospitales del territorio nacional, pertenecientes al Grupo de Trabajo de Lesiones No Intencionadas de la Sociedad Española de Urgencias de Pediatría, entre el 1 de marzo de 2014 y el 28 de febrero de 2015.

**Resultados:** De un total de 289.887 consultas, 1.022 correspondieron a caídas en menores de un año. La mediana de edad fue de 8 meses y el 52,5% fueron varones. Las lesiones por caídas fueron más frecuentes entre los 9 y los 12 meses (37,6%) y en el 83,5% el lugar de caída fue el domicilio habitual. Hasta un 69,4% sufrieron la caída desde dispositivos infantiles y desde una altura inferior a 50 cm el 47,8%. En un 68% las caídas fueron presenciadas; sin embargo, en la mitad de los casos (329) el cuidador no se encontraba en el área de alcance. Un 12% de las lesiones fueron graves. En la muestra se identificaron la altura de la caída mayor a 50 cm, las caídas en la vía pública, desde los brazos del cuidador y desde las escaleras como factores de gravedad independientes.

**Conclusiones:** Las lesiones más graves se producen en niños <3 meses y desde una altura de >50 cm, sin embargo, no se relacionan con caídas no presenciadas. Debido a que el mecanismo más frecuente en las lesiones graves es la caída desde los brazos del cuidador, desde las escaleras y en la vía pública, debemos alertar sobre este hecho para evitar la morbilidad asociada.

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## Introduction

In Spain, falls are the leading cause of unintentional injury in children aged less than 14 years, and based on a study on accidents carried out by the Asociación Española de Pediatría de Atención Primaria (Spanish Association of Primary Care Paediatrics) in 2014, they are much more frequent than poisonings or burns.<sup>1</sup>

Although most instances do not result in serious injuries,<sup>2</sup> they constitute the third leading cause of death by unintentional injury in children aged 0–9 years in countries of the European Union, according to the European Child Safety Alliance.<sup>3</sup>

Infants aged less than 1 year are particularly at risk of suffering fall-related injuries due to their increasing

independent mobility and interest in exploring their surroundings,<sup>4</sup> resulting in more than one million visits a year to emergency departments in the United States, according to data from the Centres for Disease Control and Prevention (CDC) for the 2000–2006 period.<sup>5</sup>

Previous studies have emphasised the need to analyse patterns of unintentional injury in the paediatric population within narrower age ranges.<sup>6</sup>

In Spain, no studies have been conducted to analyse fall-related injuries in infants aged less than 1 year that would help develop preventive strategies targeting this age group.

Numerous preventive strategies have been developed by different governmental agencies,<sup>7,8</sup> in spite of which there is evidence that parents are unaware of the mechanisms

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