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SYSTEMATIC REVIEW OF HERPES ZOSTER EPIDEMIOLOGY: AVAILABLE EVIDENCE IN SPAIN RELATED TO SPECIFIC SUB-POPULATIONS

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OBJECTIVES

- Herpes Zoster (HZ), the reactivation after a primary varicella zoster virus infection, is an important cause of morbidity around the world, especially among the adult population >50 years[1].
- Decline of cellular immunity related to age or immunosuppressive conditions are among the main reasons for HZ ocurrence[2], but an increased risk of HZ seems to occur in other specific sub-populations with pre-existing medical conditions[3].
- This study aims to review the available scientific evidence about incidence of HZ in the general population and in specific sub-populations, in Spain.

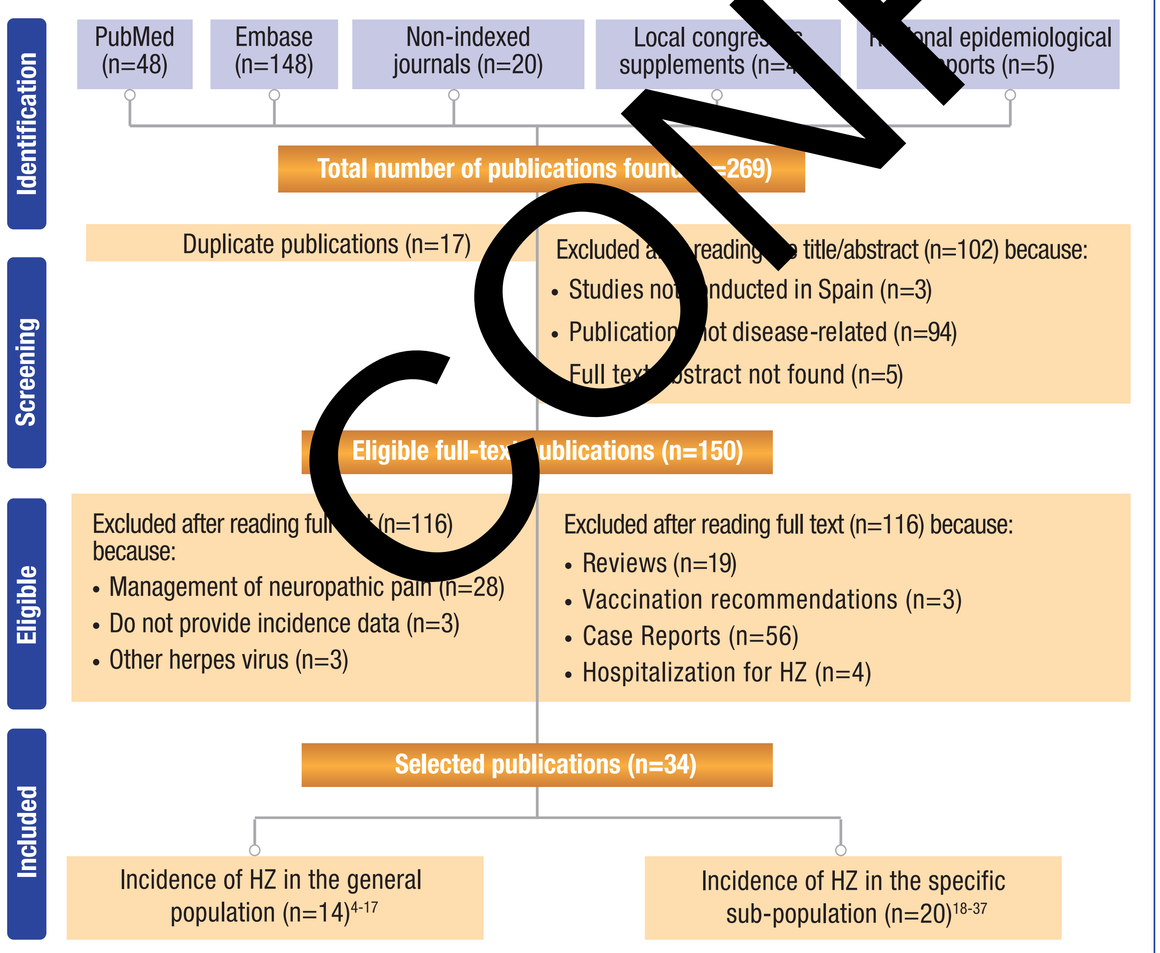
METHODS

- A systematic literature review (up to October 31, 2016) was carried out using Medline (PubMed) and Embase databases, combining several search terms: "herpes zoster", "diabetes mellitus" (DM), "chronic obstructive pulmonary disease" (COPD), "chronic heart failure", "mental disorders" and "immunocompromised".
- Three manual searches were additionally conducted: 1) non-indexed Spanish journals well-known in the infectious disease field; 2) supplements of local scientific congresses related with HZ; and 3) official epidemiological reports published by regional governments.
- Inclusion criteria were: English or Spanish publications reporting incidence rate or incidence proportion of HZ in the Spanish general population and/or specific sub-populations. No restrictions were applied on study design or population age.

RESULTS

- Among 264 references retrieved, 29 were finally included. Additionally, 5 regional epidemiological reports were identified and reviewed (Figure 1).
- HZ incidence rate in general population ranged from 2.1[4] to 5.5[7]/1,000 inhabitant-years (Table 1). Higher HZ incidences were found for elderly population (>70 years)[5,6,8] and women[5,7,9,10].

Figure 1. Flow diagram for the systematic literature review and the selection of publications



HZ: Herpes Zoster

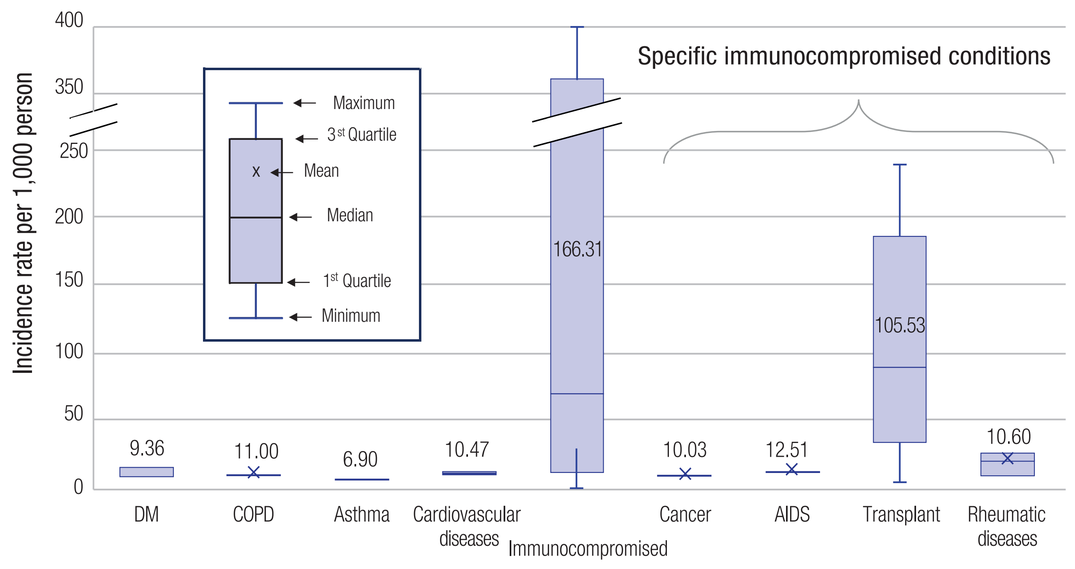
Table 1. Characteristics of HZ publications in general population

Type of study (years)	HZ incidence*
Retrospective[4] (2008-2009)	2.1/1,000 person-years (all ages)
Retrospective[5] (2011)	4.9/1,000 person-years (>14 years)
Retrospective[6] (2014)	4.9/1,000 person-years (Mea… years) 12.0/1,000 person-years (70-74 …rs) 10.1/1,000 perso…ears (>75 ye…
Retrospective[7] (2009-2014)	5.5/1,0… person-yea… l ages)
Prospective[8] (2006-2007)	4.1/1,… persons (general) 1.3/1,000 p…ns (<50 years) 6.7/1,000 perso…0-59 years) …2/1,000 persons (…0-69 years) …/1,000 persons (≥70 years)
Retr…pective[9] (…07-2011)	4.8/1,000 persons (all ages) 6.2/1,000 persons (45-65 years) 11.9/1,000 persons (65-74 years) 10.9/1,000 persons (75-84 years)
…pective[10] (2001-2010)	4.2/1,000 persons**
Retrospective[11] (2007-2009)	4.8/1,000 persons (15-100 years)
Ambi…tive****[12] (2006-…07)	8.4/1,000 persons (15-49 years) 6.5/1,000 persons (50-59 years) 8.7/1,000 persons (60-69 years) 8.3/1,000 persons (70-100 years)
Regional registry[13] (2010-2015)	3.9/1,000 persons (all ages)
Regional registry***[14] (2012)	1.5/1,000 persons (all ages) 1.67/1,000 persons (50-59 years) 2.71/1,000 persons (60-69 years) 3.31/1,000 persons (70-79 years) 3.64/1,000 persons (>80 years)
Regional registry***[15] (2001-2013)	2.6/1,000 persons (all ages) 3.3/1,000 persons (45-64 years) 6.8/1,000 persons (65-84 years) 6.5/1,000 persons (≥85 years)
Regional registry[16] (2015)	5.2/1,000 persons (all ages)
Regional registry[17] (2015)	3.7/1,000 persons (all ages)

*Incidence rate (n/person-years) or incidence proportion (n/persons); **Age range not specified; ***HZ incidence showed for population >50 years, additional info for other age ranges available in the report; ****This study partially includes results from reference 8. Here is presented additional data not included in reference 8; HZ: Herpes Zoster.

- Twenty references[18-37], assessed the incidence of HZ in specific sub-populations (Figure 2).
- An increased risk of HZ vs general population was reported for DM[17,20] (24%), COPD[21] (39%) and COPD patients receiving inhaled corticosteroids[21] (61%).

Figure 2. Incidence proportion of HZ in specific sub-population



DM: Diabetes Mellitus; COPD: Chronic Obstructive Pulmonary disease; AIDS: Acquired immunodeficiency syndrome

CONCLUSIONS

- **Although studies conducted in Spain are heterogeneous, their results point towards a higher HZ incidence in specific sub-populations, i.e. age-specific and at risk, than in the general population.**
- **The present study could contribute to identify target age populations and at-risk groups if implementation of HZ vaccination programs in Spain would be considered.**

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Disclosures

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