

# EPIDEMIOLOGY OF HODGKIN LYMPHOMA IN EUROPEAN COUNTRIES: A TARGETED LITERATURE REVIEW

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## BACKGROUND

- Hodgkin lymphoma (HL) is a malignant tumor of the lymphoid tissue which originates from B lymphocyte and is less common in T lymphocyte.
- HL is a curable disease that usually starts in lymph nodes and is treated with chemotherapy and sometimes using radiation therapy.<sup>1</sup>
- It is a rare cancer and poses a significant epidemiological burden especially in European countries.
- As per Global Cancer Incidence, Mortality and Prevalence database (GLOBOCAN), the incidence of HL (0.45%) is higher than mortality rate (0.22%) in 2018. Moreover, out of 35 cancers listed in the database, 23 cancers accounted for a higher 5-year prevalence than HL in the same period.<sup>2</sup>

## OBJECTIVES

This review was conducted to summarize the epidemiological burden of HL in Europe.

- Incidence
- Prevalence
- Mortality

## METHODS

Table 1: Eligibility Criteria

PICOTS	Summary Criteria
<b>Population</b>	<ul style="list-style-type: none"> <li>Population with or without any disease</li> </ul>
<b>Outcomes</b>	<ul style="list-style-type: none"> <li>Incidence</li> <li>Prevalence</li> <li>Mortality</li> </ul>
<b>Time-period</b>	<ul style="list-style-type: none"> <li>Last 10 years (2009 to Jun-2019)</li> </ul>
<b>Study design</b>	<ul style="list-style-type: none"> <li>Real world/observational studies</li> <li>Prospective cohort studies/longitudinal observational study</li> <li>Retrospective cohort studies</li> <li>Case-control studies</li> <li>Population based/cross-sectional studies</li> </ul>
<b>Region</b>	<ul style="list-style-type: none"> <li>Europe</li> </ul>

- A targeted literature search of published studies in English from January 2009 through June 2019 was performed using PubMed, Embase and Cochrane Library databases.
- Real world evidence studies with reported data on the incidence, prevalence and mortality of HL patients were included. Widely used cancer databases like GLOBOCAN and European Cancer Information System (ECIS) were searched as a part of the grey literature.
- The screening of identified studies from various databases has been done in two steps.
- In step 1, the reviewer evaluated the retrieved studies based on the title and abstract of articles.
- In step 2, the reviewer screened full-text for those articles that were eligible for second pass screening. The criteria which have been used for excluding the articles after step 1 screening include non-HL population, non-English, non-human, publication type not of interest, and non-European countries.
- Outcomes that met the eligibility criteria were extracted from the publications of interest.
- Findings were synthesized and analyzed.

## RESULTS

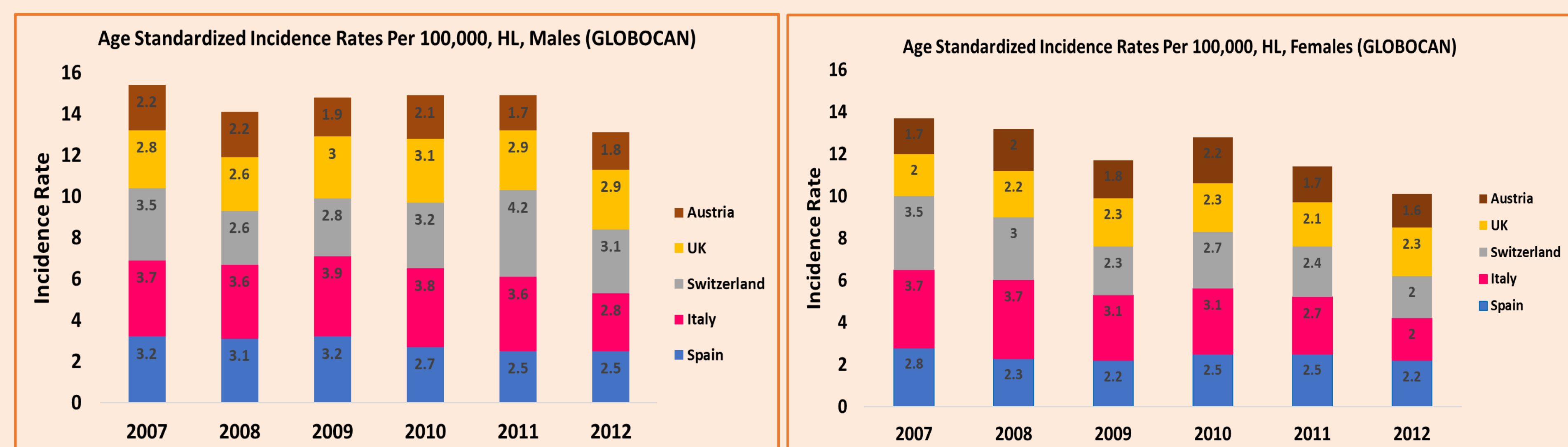
Table 2: Prevalence of Hodgkin Lymphoma from European Studies

HL	Calcagno et al. 2017 (3)	Dusek et al. 2015 (4)	Laurent et al. 2015 (5)	Li et al. 2016 (6)	Liu et al. 2011 (7)	Crocetti et al. 2013 (8)
<b>Regions</b>	Italy	Czech Republic	France	UK	Netherlands	Nordic Countries*
<b>Time Period</b>	2000-12	2011	2001-08	2004-11	1989-2006	Mid 2000's
<b>Number of cases</b>	32/103	<ul style="list-style-type: none"> <li>M: 206,96</li> <li>F: 268,493</li> </ul>	434	<ul style="list-style-type: none"> <li>M: 20,950</li> <li>F: 21,608</li> </ul>	3968	NA
<b>Prevalence per 100,000/%</b>	29.10%	<ul style="list-style-type: none"> <li>M: 4,012</li> <li>F: 5,021</li> </ul>	NA	<ul style="list-style-type: none"> <li>M: 73.3</li> <li>F: 71.5</li> </ul>	NA	<ul style="list-style-type: none"> <li>M: 11</li> <li>F: 9</li> </ul>

F: Female; M: Male; HL: Hodgkin Lymphoma; UK: United Kingdom; NA: Not Available; \* Denmark, Finland, Iceland, Norway, and Sweden

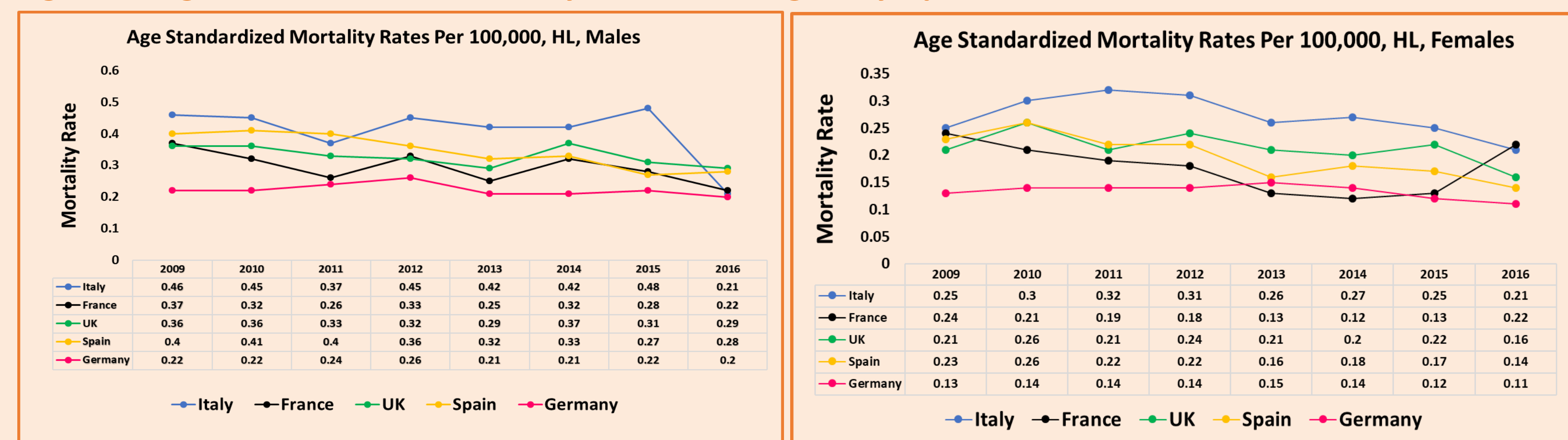
- The prevalence of HL was high in European countries like Italy, France and United Kingdom.
- In 2018, the prevalence rate ranged from 14.98 in Croatia, 11.89 in Greece, 11.37 in France, and 9.19 in Spain. Genetic factors were the major causes for prevalence in Europe.

Figure 1: Age Standardized Incidence Rates of Hodgkin Lymphoma in Males and Females<sup>2</sup>



Overall, the incidence of HL is higher in males than females in Austria, UK, Switzerland, Italy and Spain from 2007 to 2012. Also, the age-standardized incidence rates for Austria is lower than for other countries.

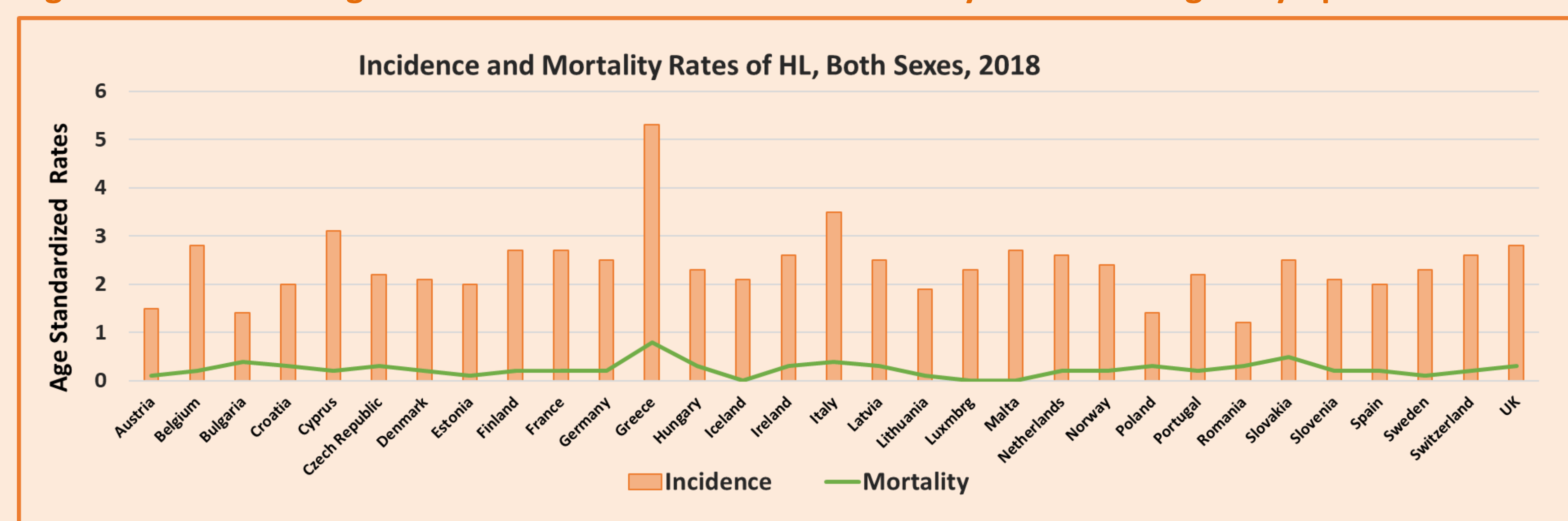
Figure 2: Age Standardized Mortality Rates of Hodgkin Lymphoma in Males and Females



Age-standardized mortality rates for HL is higher in males than females in Italy, France, UK, Spain and Germany from 2009-2016

Source: WHO-IACR Cancer Mortality Database; HL: Hodgkin Lymphoma; UK: United Kingdom

Figure 3: Estimated Age Standardized Incidence and Mortality Rates of Hodgkin Lymphoma



Source: European Cancer Information System

## CONCLUSIONS

- Prevalence results from few of the European publications have been collaborated and synthesized in this review in order to reflect true scenario.
- There are limited data on epidemiological burden of HL.
- More population-based and longitudinal studies should be conducted to address the data gap present in this disease area for European countries.

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