

# Patients with Hodgkin's lymphoma have a significantly better outcome if treated within a clinical trial.

Alden A. Moccia, Wiebke Gulden, Anastasios Stathis, Franco Cavalli, Michele Ghielmini, Kathrin Aprile von Hohenstaufen, Barbara Vannata and Emanuele Zucca  
**Oncology Institute of Southern Switzerland, Bellinzona, Switzerland** Corresponding author: [alden.moccia@eoc.ch](mailto:alden.moccia@eoc.ch)

## INTRODUCTION

- Hodgkin's lymphoma (HL) is highly curable with multi-agent chemotherapy and represents approximately 30% of all lymphoid malignancies<sup>1</sup>
- Treatment outcome for patients with HL has remarkably improved over the last three decades, and more than 80% of patients with advanced stage disease can be cured with first-line therapy.<sup>2</sup>
- Prognosis of patients enrolled in clinical trials may even be superior than the one of patients treated in the community.
- Over the past 3 decades, an intense collaboration between the Swiss Group for Clinical Cancer Research (SAKK) and the German Hodgkin Study Group (GHSG) has been established.
- Since the mid-'90s, also in our Institution many patients with HL have been prospectively included in the GHSG trials. However, many other patients with HL have not been included in these trials for various reasons.

## METHODS

- This is a retrospective population-based analysis using the electronic lymphoma database of our Institution.
- All patients diagnosed with a biopsy proven HL between January 1996 and December 2012 treated at the IOSI were included in the analysis.
- Follow-up information was retrieved from the IOSI's Lymphoid Cancer Database, hospital records and individual physicians' records.
- Primary endpoint was overall survival (OS) which was defined according to the NCI criteria and estimated by the method of Kaplan–Meier. The Cox proportional hazards model was used for the estimation of hazard ratio and its confidence interval in a multivariate analysis.

## BIBLIOGRAFIA

1. Canellos GP, Niedzwiecki D: Long-term follow-up of hodgkin's disease trial. N Engl J Med 346:1417-1418, 2002

2. Moccia AA, Donaldson J, Chhanabhai M, et al: International prognostic score in advanced-stage hodgkin's lymphoma: Altered utility in the modern era. J Clin Oncol 30:3383-3388, 2012

## RESULTS

- 172 patients were identified.
- Patient characteristics and the distribution of adverse prognostic factors are listed in **Table 1**.
- With a median follow-up of 5.6 years, 138 patients were alive and 34 had died.
- The rate of enrollment in the GHSG trials in our Institution was 24%; participation of patients younger than 40 years in randomized trials was significantly higher compared with those older than 40 years.
- The 5-year overall survival of the whole studied population was 79%, and was 92%, 84% and 75% early, early unfavorable and advanced stage GHSG risk group, respectively (**Figure 1**).
- Patients included in clinical trials had a significantly better outcome (p=0.0047), **Figure 2**.
- The inclusion in a clinical study maintained its prognostic value at a multivariate analysis in a Cox model controlling for age and for the GHSG risk group (**Figure 3**).

Table 1.

Patient Characteristics at Diagnosis

<b>n</b>	172
M, n (%)	93 (54)
F, n (%)	79 (46)
<b>Median age, y</b>	38
<b>Ann Arbor stage, n(%)</b>	
I, n (%)	22 (13)
II, n (%)	96 (56)
III, n (%)	26 (15)
IV, n (%)	28 (16)
<b>Bulky disease, n(%)</b>	112 (65)
<b>B symptoms, n(%)</b>	69 (40)
<b>GHSG risk group</b>	
early, n (%)	17 (10)
early unfavorable, n (%)	70 (40)
advanced, n (%)	92 (50)
<b>Included in GHSG trials, n (%)</b>	41 (24)

Figure 1.  
OS at IOSI by GHSG risk group

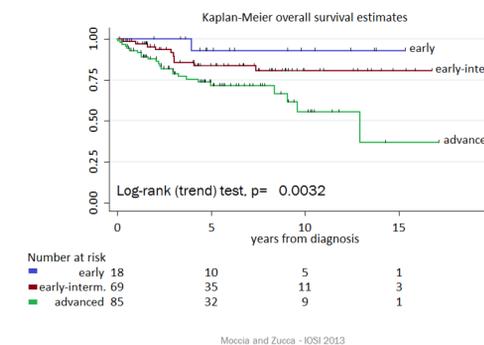


Figure 2.  
OS by participation to clinical trials

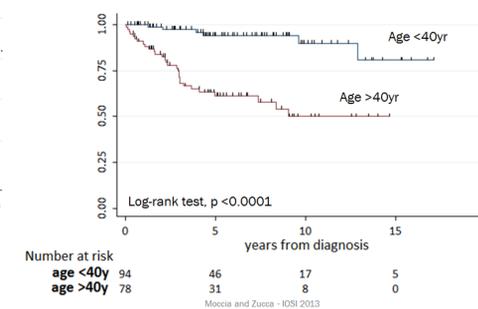
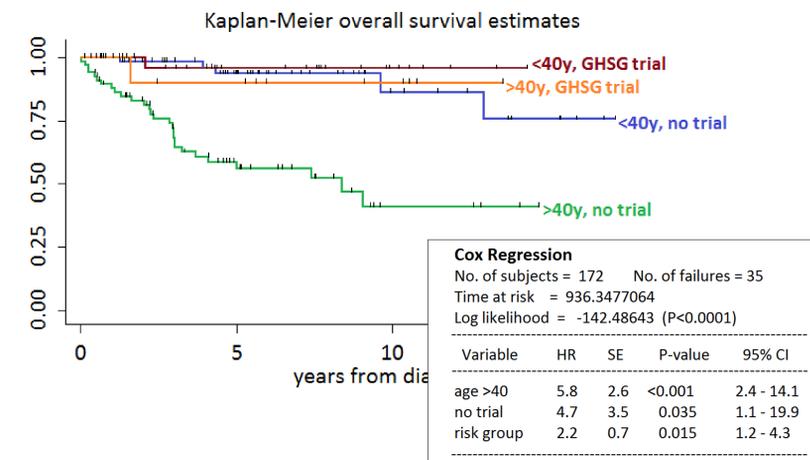


Figure 3.  
Overall survival by age and enrollment into clinical trials: multivariate analysis



## CONCLUSIONS

- This analysis suggests that patients enrolled in clinical trials may have a better outcome than patients with similar clinical characteristics at diagnosis.
- Elderly patients or patients with significant comorbidities are frequently considered not fit enough to be entered in clinical trials. Therefore, results of clinical trials cannot be completely applied to the community.
- We plan to conduct a larger survey in collaboration with other Institutions and the GHSG; the proposed research project may allow a better understanding of the different parameters behind this observation.