

# LONG-TERM SURVIVAL OF CHILDREN WITH ACUTE LYMPHOBLASTIC LEUKEMIA IN A REGIONAL FRENCH POPULATION



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## INTRODUCTION

- Thanks to the establishment of clinical trials and the occurrence of emerging therapeutics, the prognosis of **Acute Lymphoblastic Leukemia (ALL)** in children improved over the past 4 decades. In 2009, **Net Survival (NS)** at 5 years was closed to 89% in France, however no data on long-term survival was available.
- Aim** : Estimate Net Survival at 20 years (**NS-20**) of children with ALL in **Côte d'Or** with RHEMCO\* data.

## MATERIEL & METHODS

- Côte d'Or population : 531380 inhabitants (Insee, 2014).
- ICD-O-3 codes : 9727/3, 9728/3, 9729/3, 9811/3, 9813/3, 9814/3, 9815/3, 9820/3, 9835/3, 9836/3, 9837/3.
- From **01/01/1970 to 12/31/2015**.
- According to the evolution of the therapeutic management, three groups were defined:
  - 1**) from 1970 to 1993 : Patients treated successively with LAL 76 and 80, FRALLE 83, 87 and 89 clinical trials. (**< FRALLE 93**).
  - 2**) from 1993 to 2001 : with FRALLE 93 clinical trial (**FRALLE 93**).
  - 3**) since 2001 : with FRALLE 2000 clinical trial (**FRALLE 2000**).
- World Standardized Population Incidence Rate (**WSPIR**) (/100000 children/year).
- End point of follow up 01/01/2017**.
- Net Survival (**NS**) using the non-parametric Pohar-Perme estimator.
- Stata version 13.



## RESULTS

- Between 1970 and 2015, 162 cases were diagnosed in Côte d'Or (median age = 4.8 years). Boys were always more represented (table 1). 38% of children were died at 5 years in the first period versus 8% in the latest (p=0,001).

	<Fralle-1993	Fralle-1993	Fralle-2000
n (%)	84 (52)	27 (17)	51 (31)
Boys (n,%)	48 (57)	16 (59)	31 (61)
Dead at 5 years (n,%)	32 (38)	7 (26)	4 (8)

Table 1 : characteristics of patients by group.

- Sex-ratio Boys/Girls : 1.36 (p=0.055).
- WSPIR was steady between 1970 and 2000, then we observed a slight increase from 2000 (p=Not S.). (Figure 1)
- Same trend for the two sex (p=Not S.).

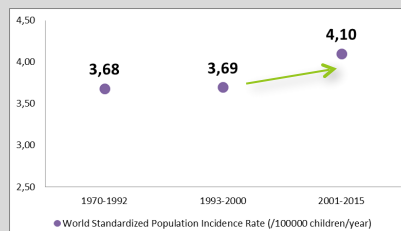


Figure 1 : WSPIR by period.

## RESULTS (Bis)

- All causes and Net Survival at 20 years were similar : 66 % [57-73] and 67% [59-75].
- Median of Follow up :
  - Girls= 18 ans,
  - Boys= 15 ans.
- NS-20 Girls> NS-20 Boys (p=Not S.). (Figure 2).

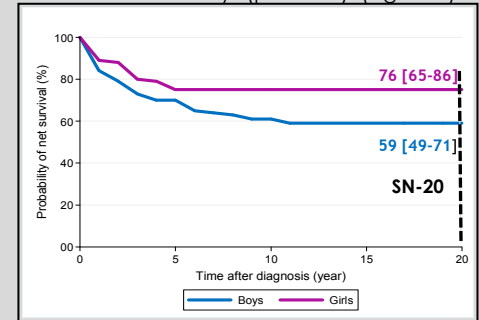


Figure 2 : Net Survival by sex.

- Median of Follow up :
  - 1970 -1992 = 30 years,
  - 1993 – 2000 = 20 years,
  - 2001 – 2015 = 7 years.
- NS improved in parallel with the therapeutic strategy used : NS-FRALLE 2000 > NS-FRALLE 93 > NS-<FRALLE93. (Figure 3).

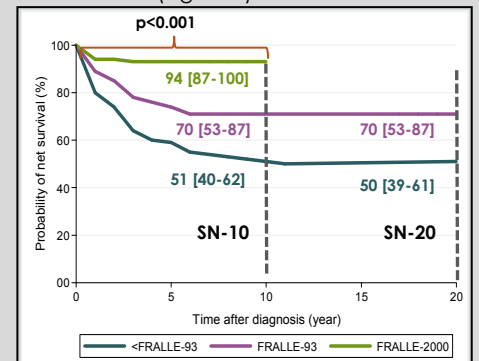


Figure 3 : Net Survival by therapeutic strategy.

## CONCLUSION

Registries are an essential source of data for the assessment of long-term prognosis for children that remains poorly studied. Our results show an improvement in the survival of patients in parallel with the therapeutic managements used (94% at 10 years with FRALLE 2000 versus 51% before FRALLE 93). Our results reflect the usefulness but also the long-term safety of these supports.