

CHILDREN WITH CANCER IN ROMANIA

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INTRODUCTION

- Rare disease in children (1,5% of all diseases)
- The leading cause of disease-related death among children and adolescents (ages 1 to 19 years)
- Better prognosis than in adults (5 years survival >80%)
- Important differences between cancer in young children and in older children (types, outcome, etc).
- The long term follow-up is necessary after the treatment completion
- Causes
 - genetic diseases → increase the risk of malignancy in childhood
 - viral infections (e.g. EBV, HIV)
 - **unknown 75-90%**

TYPES OF CANCERS IN CHILDREN

- High heterogeneity (types, age of onset, prognosis)
- Hematological malignancies: aprox 40-45%
- Central nervous system cancer: 17-20%%
- Specific malignancy of childhood:
 - neuroblastoma
 - retinoblastoma
 - Wilms tumor

SPECIFIC MALIGNANCY OF CHILDHOOD

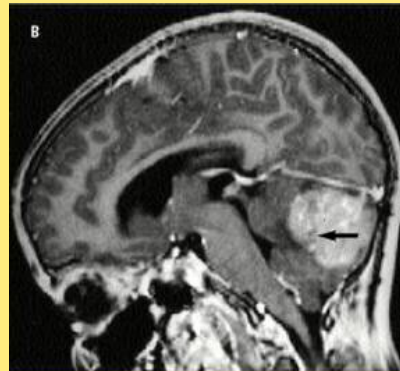
Retinoblastoma



Neuroblastoma



Medulloblastoma



Nfroblastoma



Survival of children in Europe

Period of diagnosis	5-year survival (%)	
1978-1982	54	ACCIS Magnani et al., 2006
1983-1987	65	
1988-1992	71	
1993-1997	75	
1995-2002	81	Eurocare Gatta et al., 2009

International Agency for Research on Cancer



PEDIATRIC CANCER IN ROMANIA

12 CENTERS OF PEDIATRIC ONCOLOGY

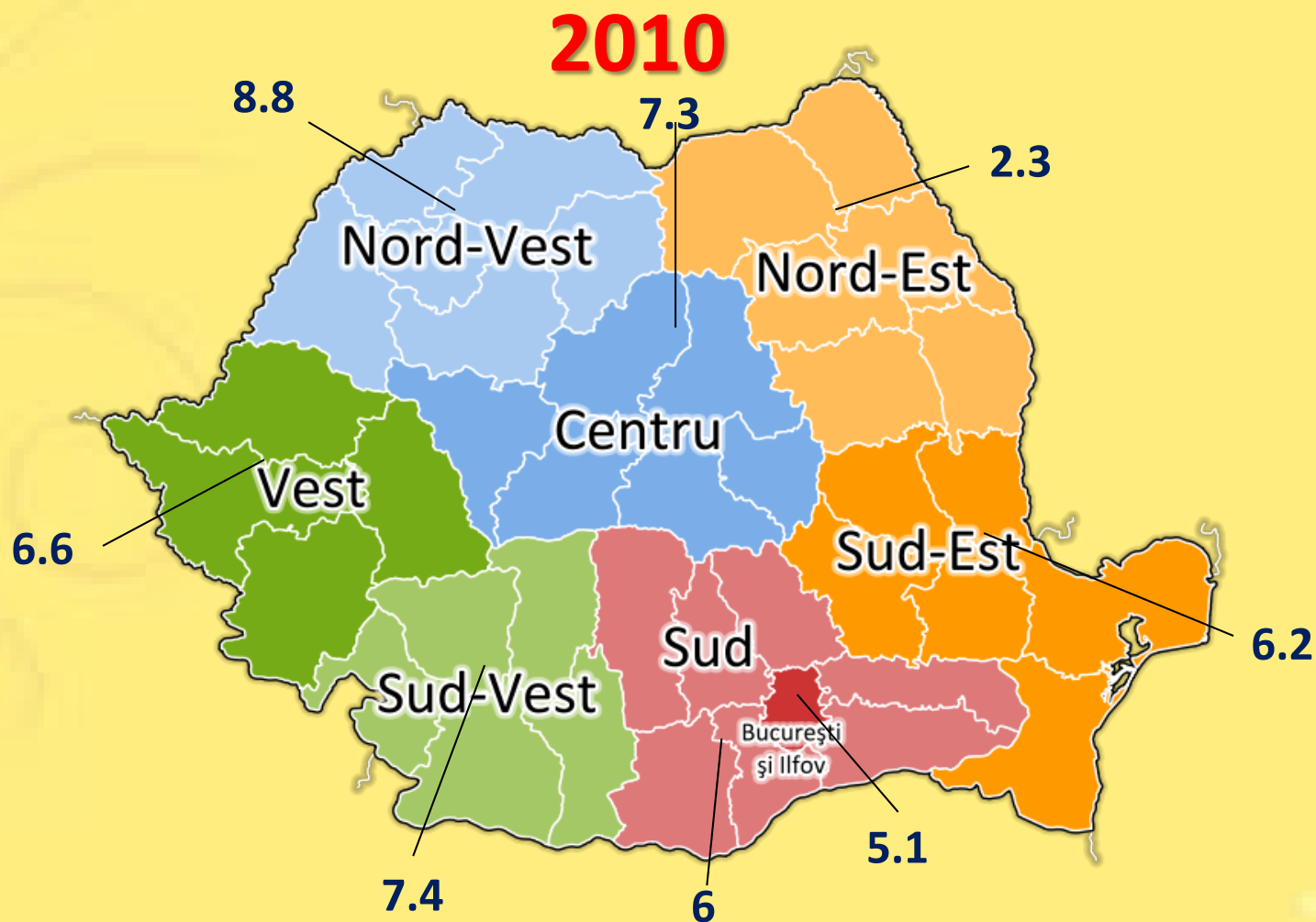


- Institutul Oncologic Bucuresti
- Clinica Pediatrie Fundeni Bucuresti
- Clinica Pediatrie "Marie Curie" Bucuresti
- Institutul Oncologic Cluj-Napoca
- Clinica Pediatrie II Cluj-Napoca
- Clinica Pediatrie "Louis Turcanu" Timisoara
- Clinica Pediatrie Craiova
- Spitalul de Pediatrie Oradea
- Clinica Pediatrie I Targu Mures
- Spitalul Pediatrie Brasov
- Clinica Pediatrie "Sfânta Maria" Iasi
- Spitalul Pediatrie Constanta

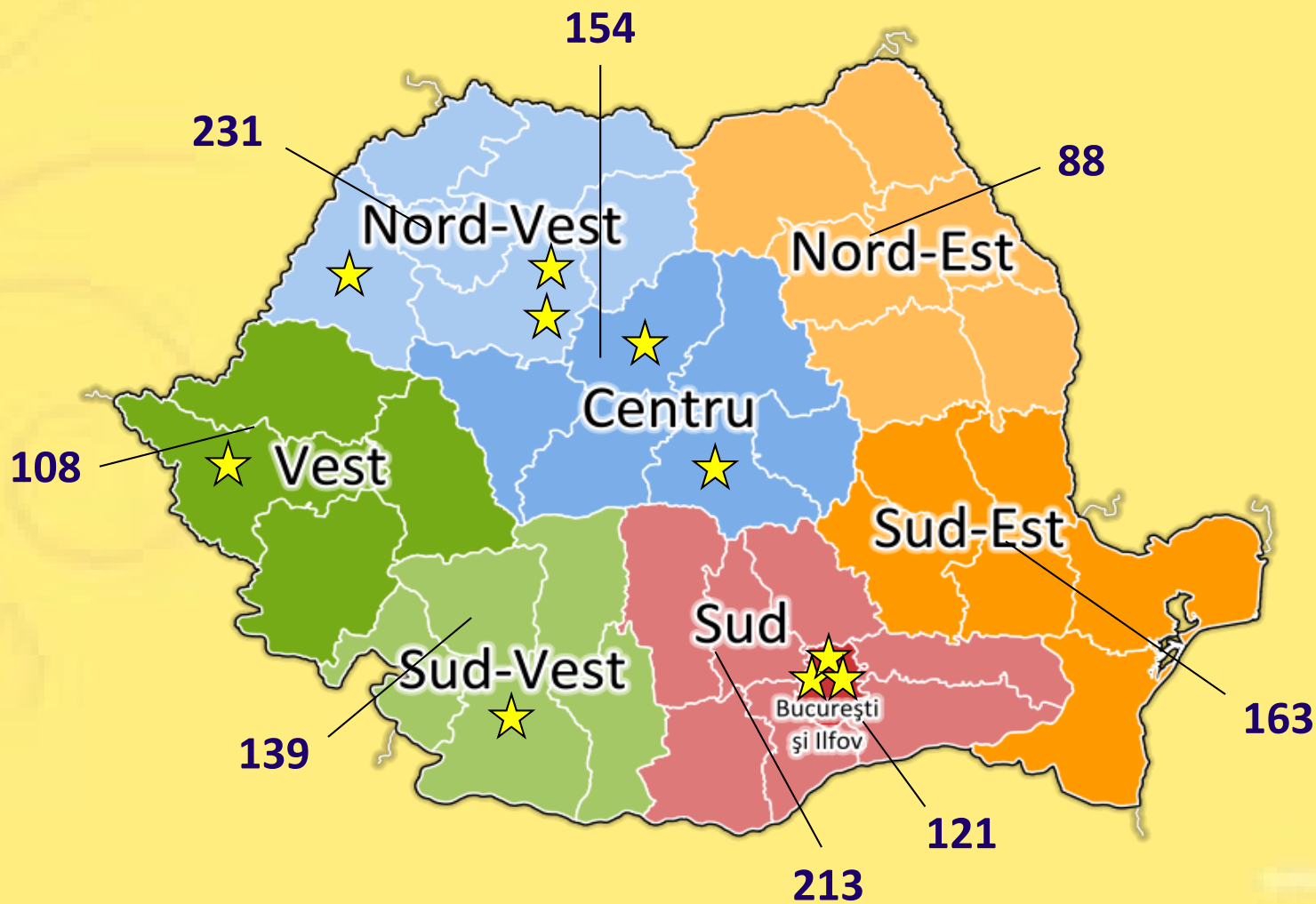
ROMANIAN NATIONAL REGISTRY OF CHILDHOOD CANCER

- Founded in September 2009 on the initiative of the Romanian Society of Pediatric Oncology
- Collects data from all over the country
- About 500 new cases every year
- Total: 5000 cases

INCIDENCE OF PEDIATRIC CANCERS (CASES/100 000 CHILDREN 0-19 YEARS) ACCORDING TO GEOGRAPHICAL AREAS IN



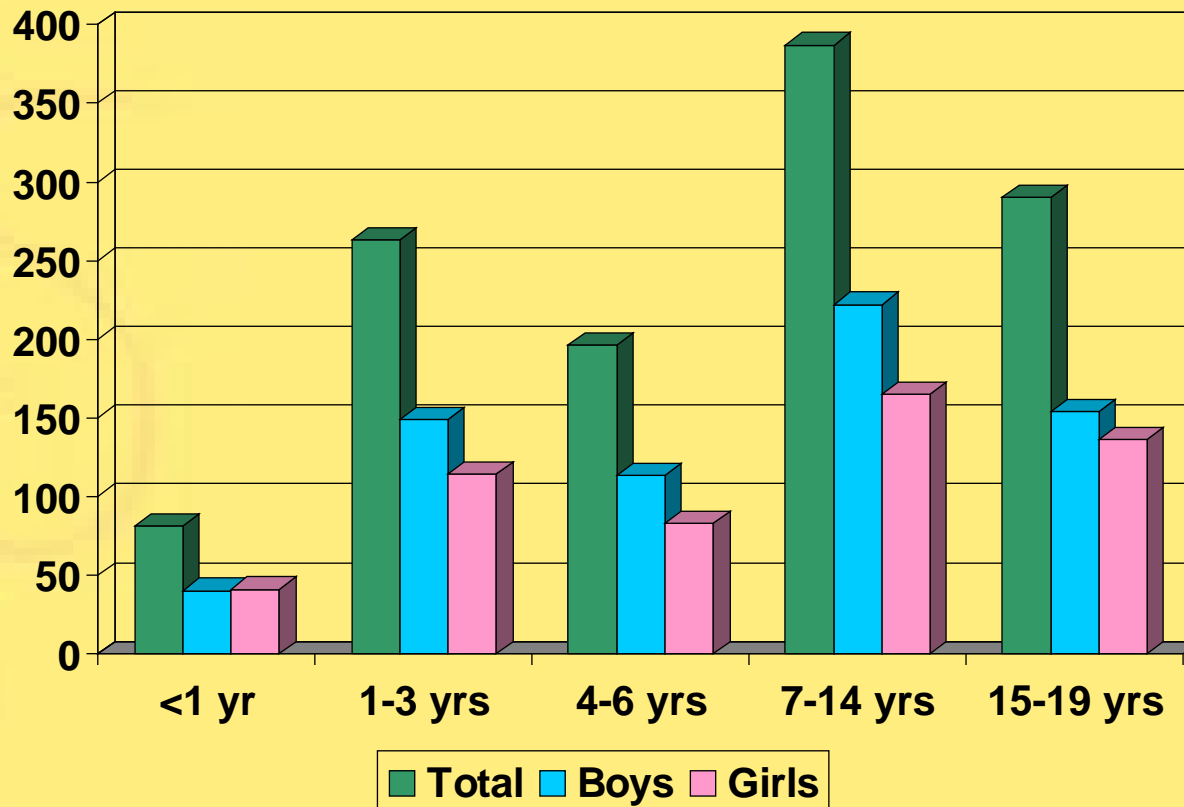
NEW CASES OF PEDIATRIC CANCERS ACCORDING TO GEOGRAPHICAL AREAS 1/09/2009-1/04/2014



NEW CASES OF PEDIATRIC CANCER ACCORDING TO AGE AND GENDER 01 SEP 2009 – 01 APR 2014

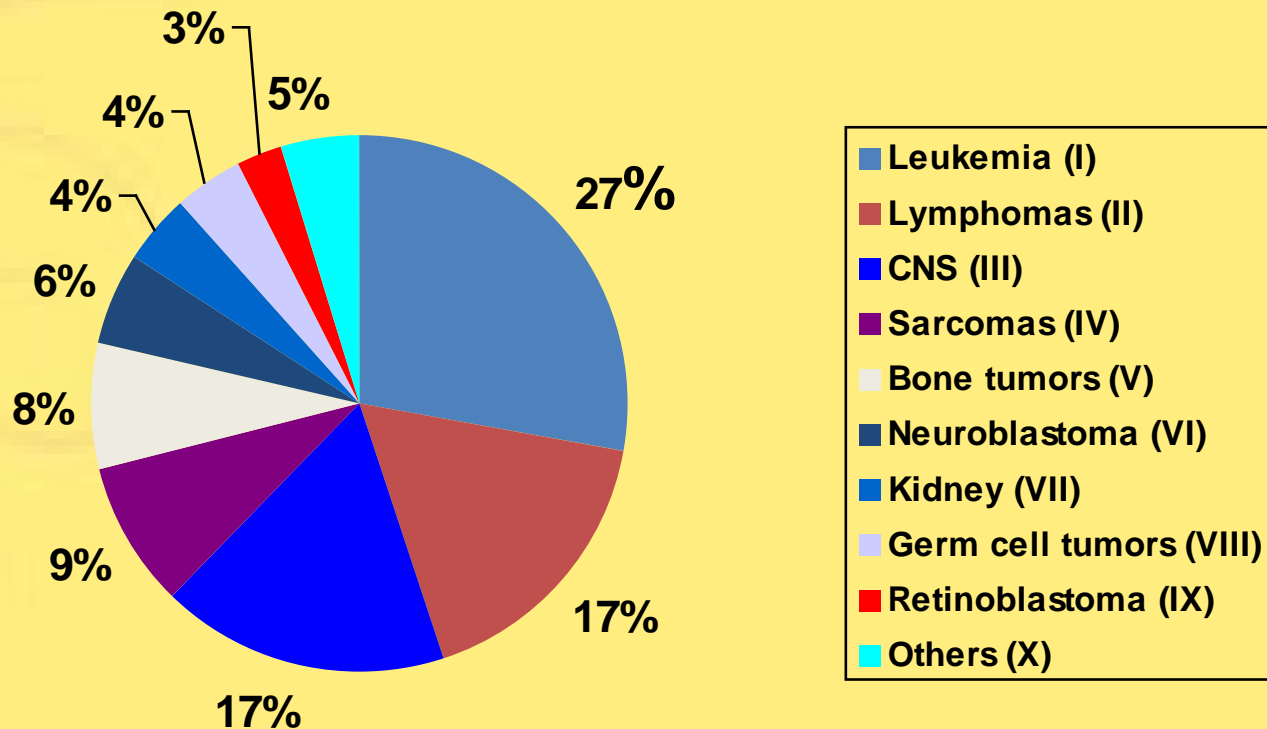
Age	Total	Boys	Girls
< 1 year	81 (6,6%)	40 (5,9%)	41 (7,6%)
1 – 3 years	263 (21,6%)	149 (21,9%)	114 (21,1%)
4 – 6 years	196 (16,1%)	113 (16,6%)	83 (15,4%)
7 – 14 years	387 (31,7%)	222 (32,7%)	165 (30,6%)
15 – 19 years	290 (23,8%)	154 (22,7%)	136 (25,2%)
TOTAL	1217	678	539

NEW CASES OF PEDIATRIC CANCER ACCORDING TO AGE AND GENDER 01 SEP 2009 – 01 APR 2014(2)



TYPES OF CHILDHOOD CANCER ACCORDING TO INTERNATIONAL CLASIFICATION OF CANCER IN CHILDREN (ICCC-3)

01 SEP 2009-01 APR 2014



TREATMENT

- Surgery
- Chemotherapy: → continuous infusion for 2-7 days for 6-12 cycles at 21-28 days
- Radiotherapy: 5days/week for 4-6 weeks
- Duration: 10- 104 weeks
- * Treatment is administered in inpatient regimen.

TREATMENT SIDE EFFECTS

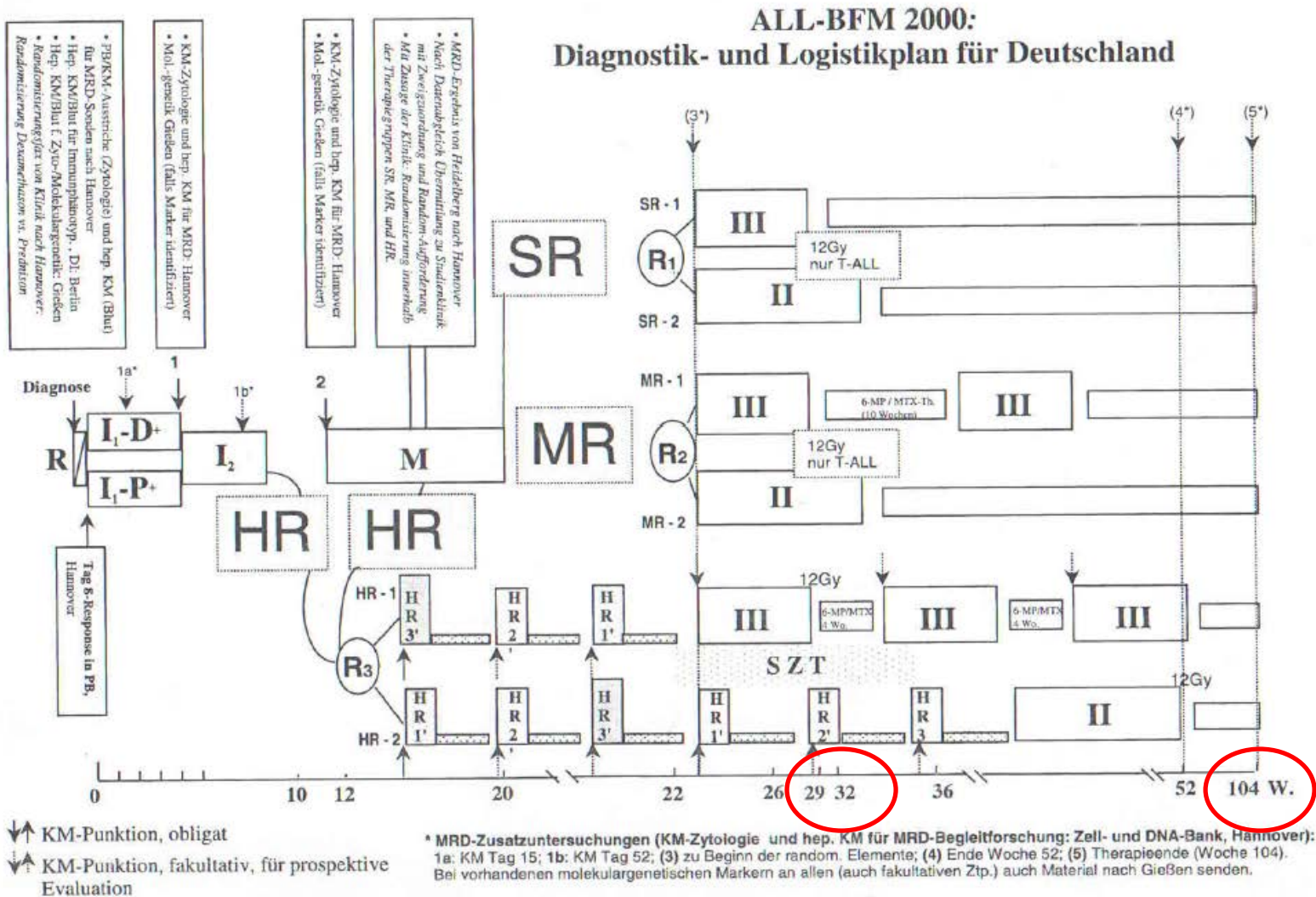
- Nausea and vomiting
- Appetite loss
- Taste change
- Fatigue
- Mouth and throat changes
- Hair loss
- Laboratory test abnormalities
 - neutropenia → ↑ risk for infections
 - trombocytopenia → ↑ risk for bleeding

↓
isolation at home/in hospital

↓
separation from peers and from peers' activities

↓
VERY HIGH NEGATIVE PSYCHOLOGICAL IMPACT

DURATION OF TREATMENT ACUTE LYMPHOBLASTIC LEUKEMIA

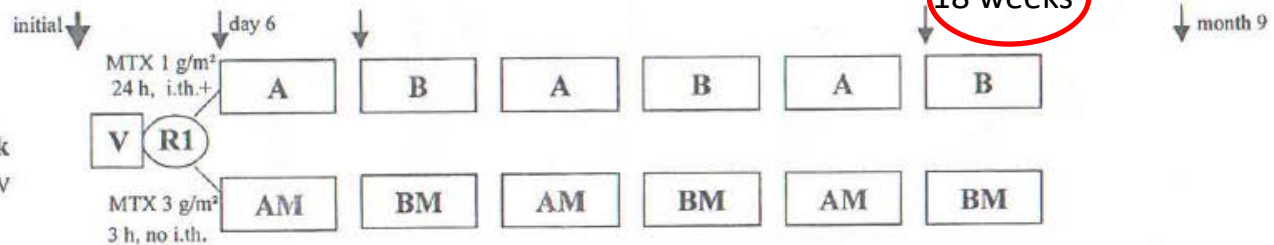


DURATION OF TREATMENT NON-HODGKIN LYMPHOMA

Low Risk
Stage I resected

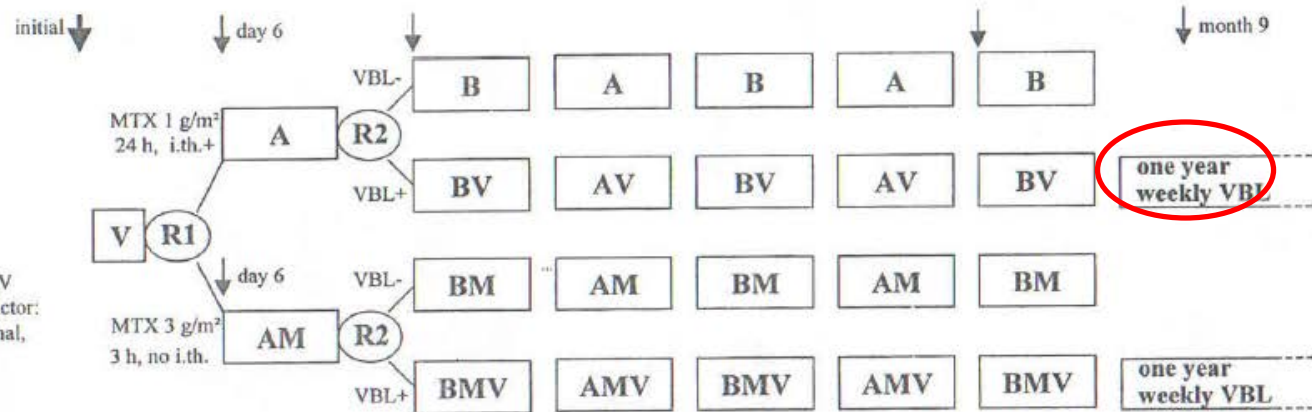


Standard Risk
Stage I NR, II, III, IV
no risk factor



High Risk

Stage I NR, II, III, IV
+ at least one risk factor:
skin, lung, mediastinal,
liver, spleen



↓ Initially send fresh tumor, heparin-BM, EDTA-BM, EDTA-PB, EDTA-Plasma, EDTA and heparin pleural effusion/ascites to BFM study center for minimal disease monitoring

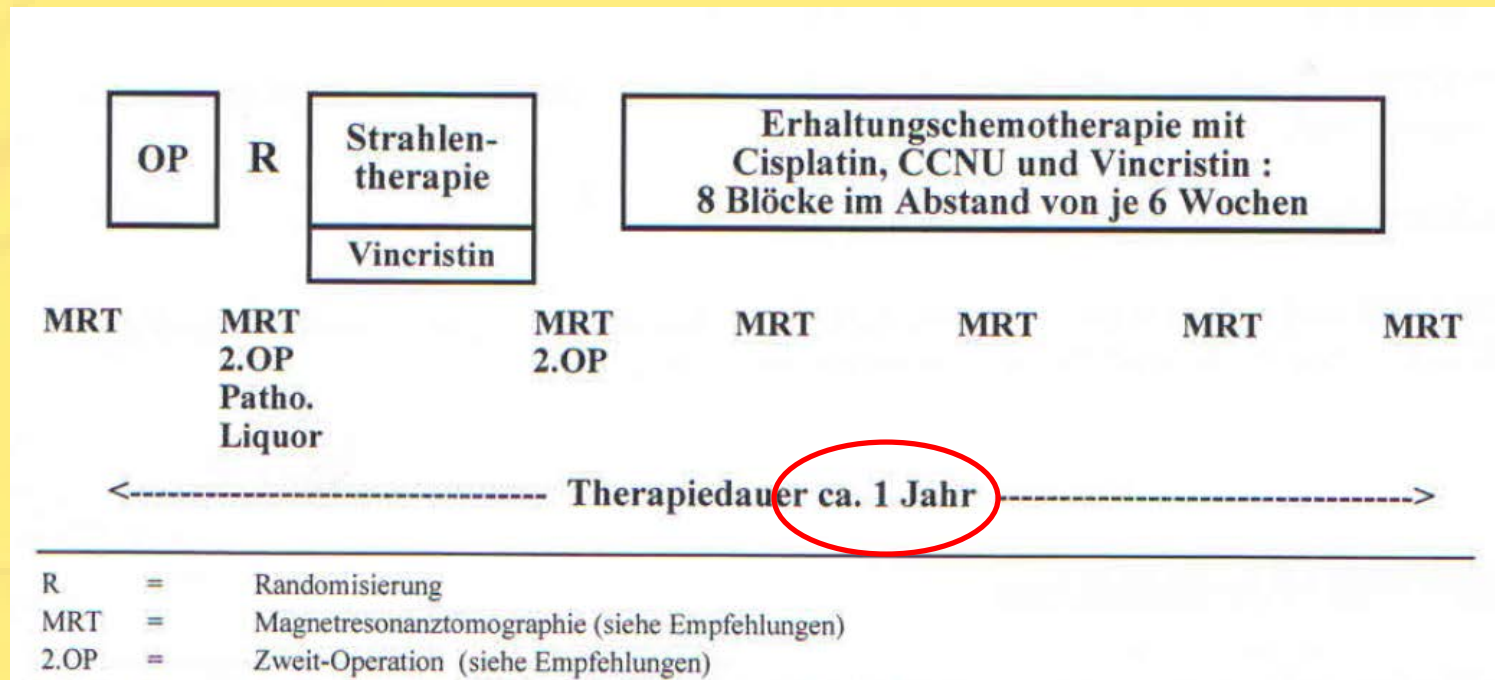
↓ For minimal residual disease monitoring after start of therapy send EDTA-BM, EDTA-PB, EDTA-Plasma

R1 For randomization of MTX diagnosis by local pathology

R2 For randomization of VBL diagnosis by national reference pathology

DURATION OF TREATMENT MEDULLOBLASTOMA

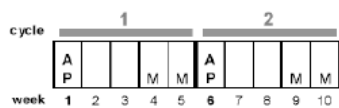
4-21 yrs, no metastasis



DURATION OF TREATMENT BONE TUMORS

EURAMOS 1 Protocol, Version 1.1, 30 June, 2006

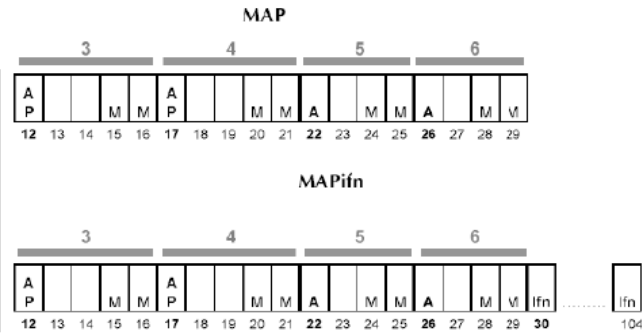
- A = Doxorubicin 75mg/m²/course
- P = Cisplatin 120mg/m²/course
- M = Methotrexate 12g/m²/course
- E = Etoposide 500mg/m²/course
- I = Ifosfamide 14g/m²/course
- i = Ifosfamide 9g/m²/course
- lfn = Interferon-α 0.5-1.0µg/kg weekly



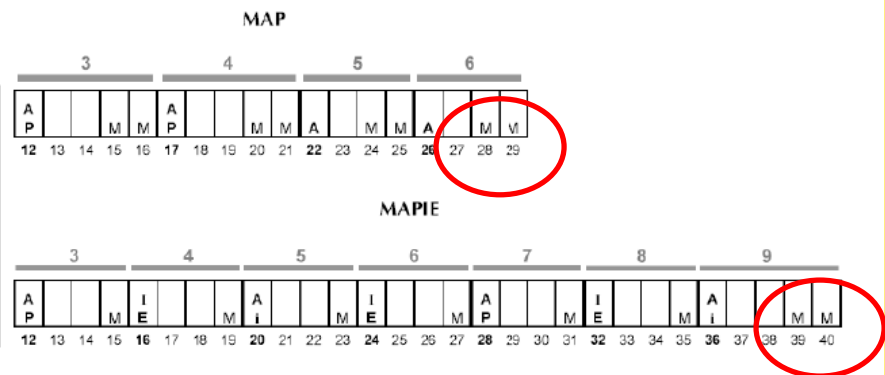
SURGERY
11

Evaluation of histological response

GOOD RESPONSE
RANDOMISSE



POOR RESPONSE
RANDOMISSE



Note: Surgery for metastases should take place between weeks 11-20. See section 9.2.2.5

PROLONGED HOSPITALISATION CONSEQUENCES

- Scholar absenteeism
- Separation from peers and from peers' activities
- Physical and psychological pain (frequent blood samples collections and intravenous treatment administrations, painful medical procedures)

SOLUTIONS

- Activities together with same age children with or without the same problem
- Psychological support (counseling, psychotherapy)
- Hospital school
- Art-therapy
- Play- therapy

SURVIVORSHIP BEGINS AT DIAGNOSIS!

**Cancer
Diagnosis
& Treatment**



**Long-Term
Survival**



**Health &
Quality of
Life**



CONCLUSIONS

- Cancer is a very rare disease in children, but it has an important negative impact.
- Continuous psychological support, various collective activities with children with the same condition as well as hospital school can improve coping and the quality of life of children with cancer.

**TRANK YOU
FOR
YOUR
ATTENTION!**

