



Funded by the
European Union's
EU4Health
Programme

20 May 2026



Presenter: Giulia Fiumana
Expert: Gianni Bisogno

**PARAVERTEBRAL MASSES WITH DIFFUSE
BONE MARROW INVOLVEMENT: A
DIFFERENTIAL DIAGNOSIS CONONDRUM**

Moderation: Raheel Altaf Raja



Funded by the
European Union's
EU4Health
Programme

COI declaration



- Nothing to declare





Case Report - Clinical presentation & initial workup (abroad)

may 2025

ONSET

11-year-old male
severe back pain
left upper and lower
limb hyposthenia and
pain

~3 kg (10%) weight
loss over one month

june 2025

CT scan (report)

bilateral paravertebral
masses (C7–T3 left, T2–
T3 right) with foramina
involvement
pleural thickening
paratracheal nodule
solid-cystic pancreatic
lesions
cervical, retroperitoneal,
pelvic, and inguinal
lymphadenopathies

Inguinal lymph node
biopsy and bone
marrow biopsy:
"malignant tumor or
highly aggressive
lymphoma"

Treatment initiated
with an unidentified
anti neoplastic
agent



Case Report - Presentation at our Institution

late june 2025

ED admission
poor conditions:
inability to stand
bilateral upper and
lower limbs
hyposthenia
cachexia

Lab exams

Hb 92 g/L

PLT 323.000/mm³

WBC 8,760 (N 5.100, L
2.280/mm³)

CRP negative

LDH 1.800 U/L

amylase 198 U/L,

lipase 374 U/L

Neck-chest-
abdomen CT

Spinal MRI

overall progression
compared to prior
reports

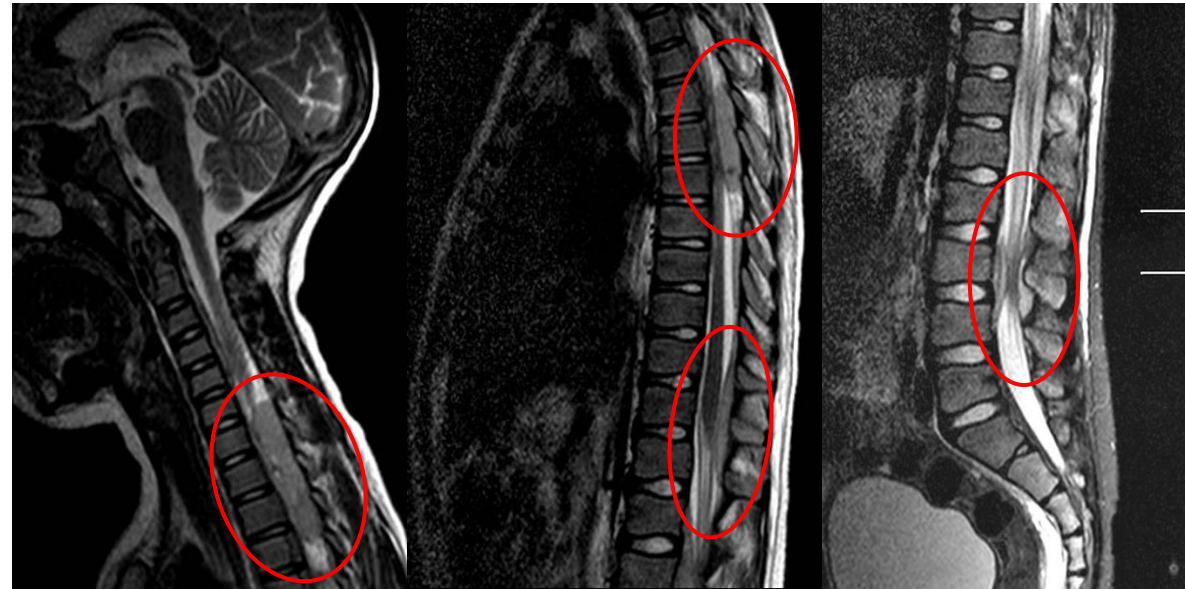


Funded by the
European Union's
EU4Health
Programme

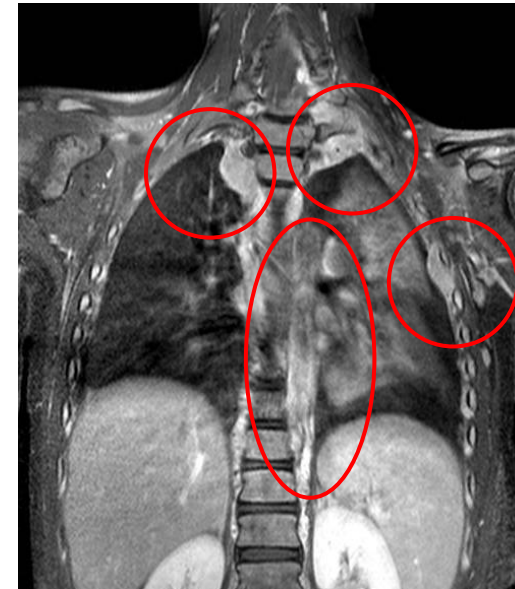
Case Report - Imaging

**European
Reference
Network**
for rare or low prevalence
complex diseases

Network
Paediatric Cancer
(ERN PaedCan)



Multiple
spinal
involvement



Paraspinal
& costal



Abdominal &
inguinal
lymphnodes



Pancreas



Question 1

Which diagnosis would you suspect?

- Neuroblastoma
- Rhabdomyosarcoma
- Non-Hodgkin lymphoma
- AML with myeloid sarcoma



Funded by the
European Union's
EU4Health
Programme

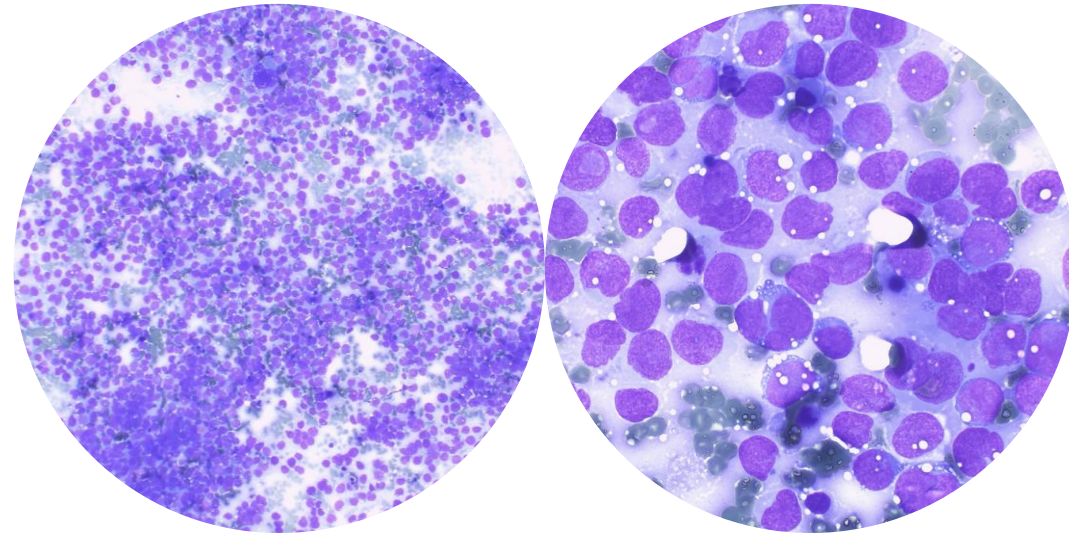
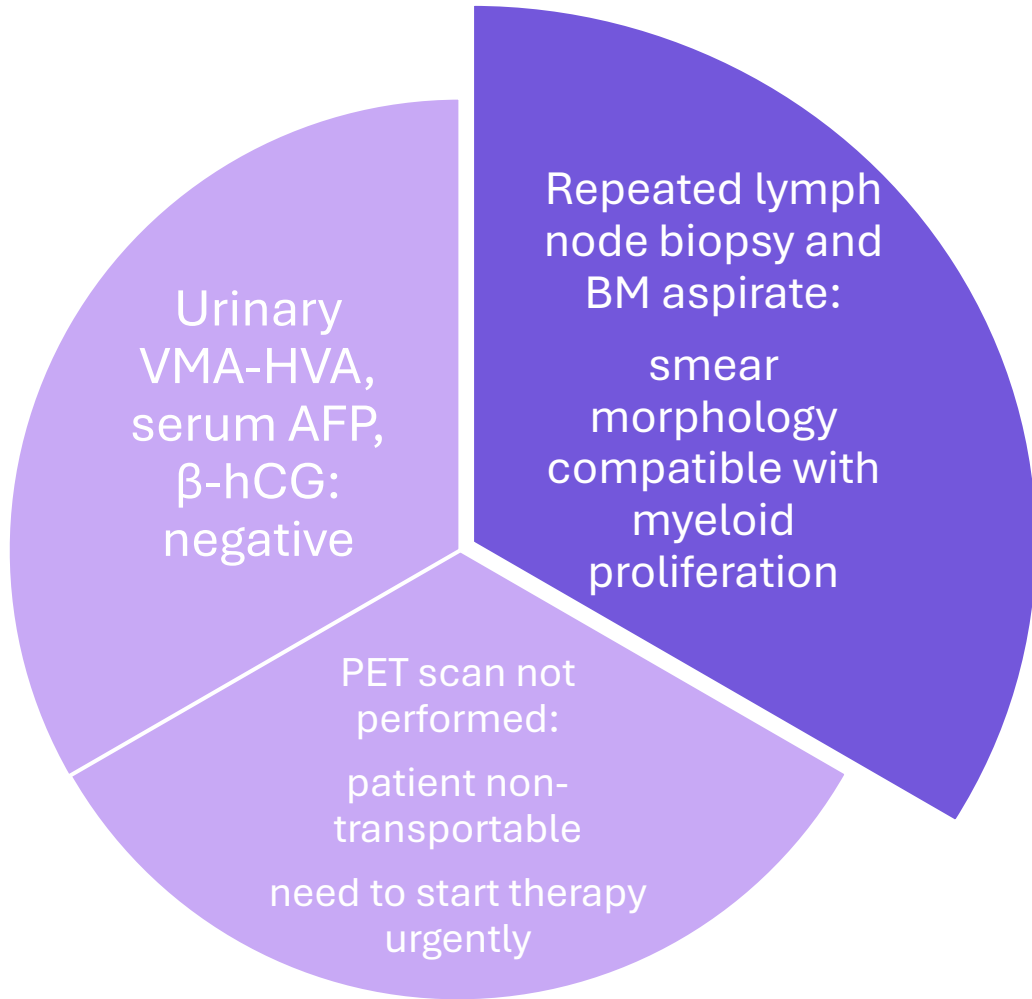
Question 2

What would be your initial management?

- High-dose steroids
- Emergency laminectomy
- Chemotherapy
- Complete diagnostic workup first

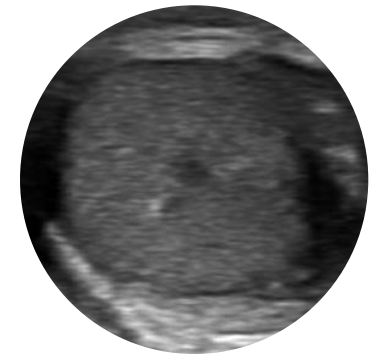


Case Report - Workup & Restaging



→ case handed over to the hematology team

testicular ultrasound for leukemia workup: bilateral lesions (not clinically detectable)



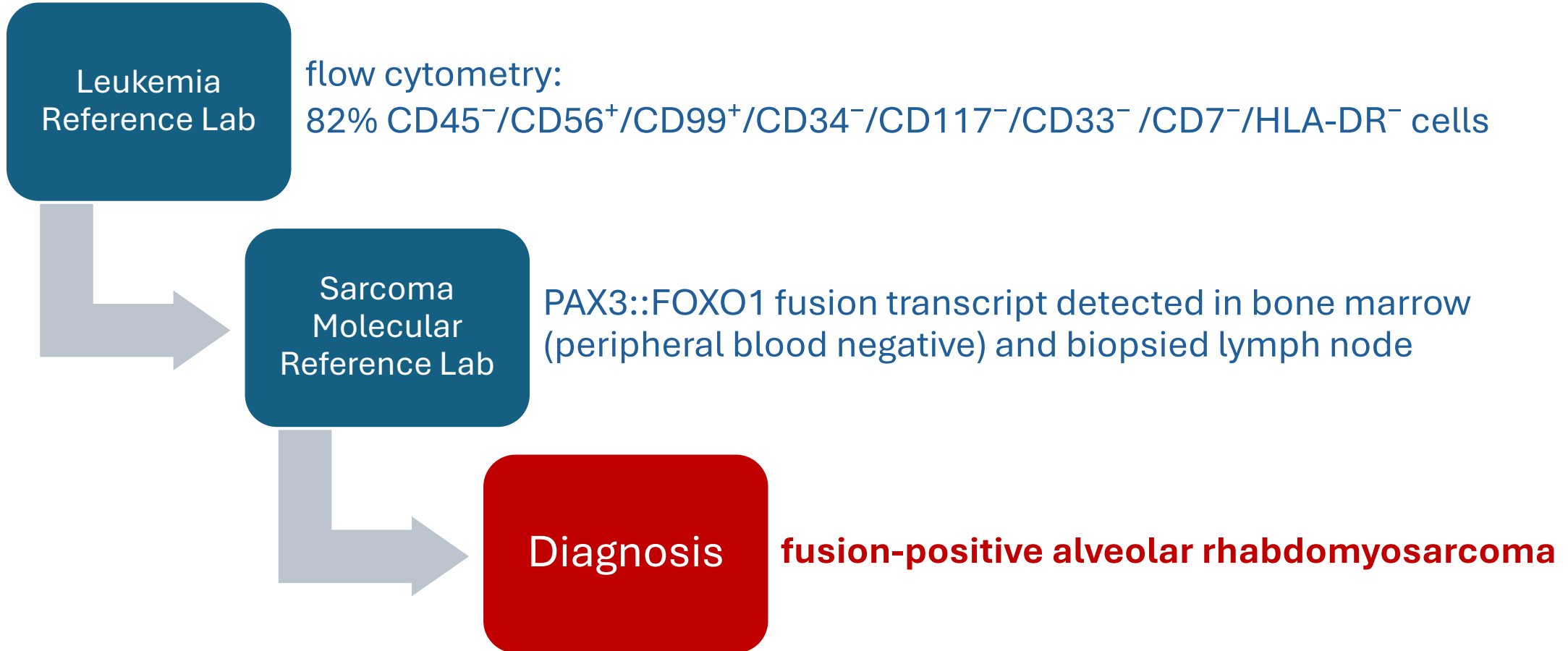


Funded by the
European Union's
EU4Health
Programme

Case Report - Immunophenotyping & molecular diagnosis

 **European
Reference
Network**
for rare or low prevalence
complex diseases

 **Network**
Paediatric Cancer
(ERN PaedCan)





Question 3

Which induction chemotherapy regimen would you choose for a fusion-positive metastatic alveolar RMS?

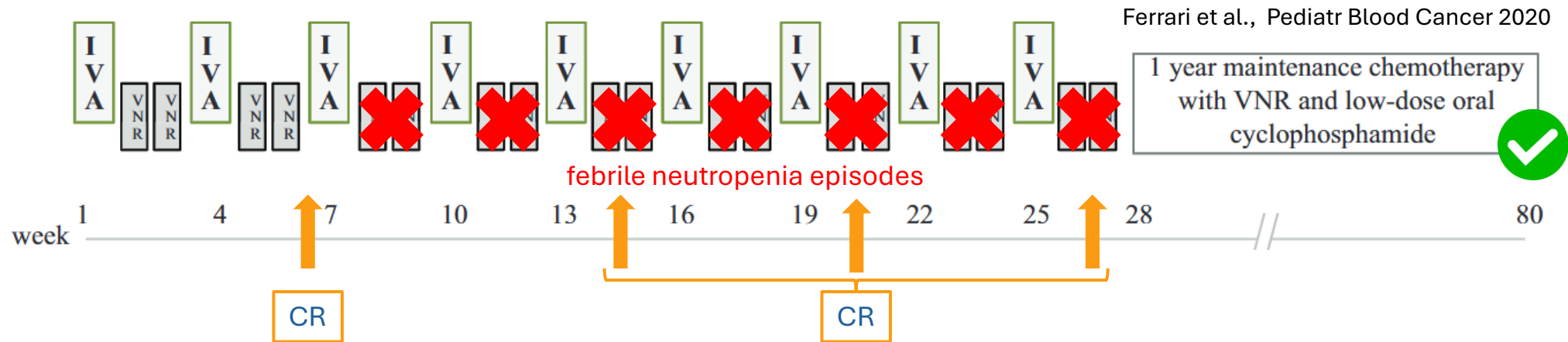
- IVA (ifosfamide, vincristine, actinomycin D)
- IVADo (IVA + doxorubicin)
- IrIVA (IVA + irinotecan)
- Other



Case report - Treatment & outcome

Suboptimal cardiac function on echocardiography → Doxorubicin omitted

Neurological compromise → Vincristine substituted with Vinorelbine = (V)IVA schedule



Local treatment not performed:

- no longer surgically resectable disease
- RT on initial sites not feasible due to excessive extension



Funded by the
European Union's
EU4Health
Programme



European
Reference
Network

for rare or low prevalence
complex diseases

Network
Paediatric Cancer
(ERN PaedCan)

Discussion





Take home messages

- Diffuse BM involvement in RMS can closely mimic hematologic malignancies - myogenic IHC and molecular panels are the key
- Detection of PAX3::FOXO1 fusion transcript in BM served as a sensitive marker for disease monitoring during treatment in our case
- Even patients with fusion-positive metastatic ARMS can achieve complete response with adapted induction chemotherapy — however, optimal treatment strategy remains undefined and the risk of relapse remains high