# EHA-ROHS-NHS Tutorial on "Real world challenges and opportunities in diagnostics and management of onco-haematological patients today"

Self-assessment Case – Session 2

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# Introduction

- A 27-year-old caucasian girl presented with a persistent cough, dyspnoea, supraclavicular node and thoracic pain
- Chest X Ray showed mediastinal enlargement
- CT scan: anterior mediastinal mass 2.5cm, internal mammary adenopathies 2.2 × 3.2cm, left lung lesion 3cm, right axilla adenopathy 1.6 cm
- PET/CT bilateral supraclavicular, left paratracheal, anterior mediastinal, right axilla and lung uptake. Bone marrow diffuse uptake
- ESR 48mm/hr
- FBC showed: WBC 4.7 × $10^9$/l, RBC 5.2 × $10^{12}$/l, Hb 12.8 g/l, Hct 0.42, MCV 82 fl, platelets 281 × $10^9$/l
- **Supraclavicular biopsy: Classic Hodgkin disease SN CD30+**

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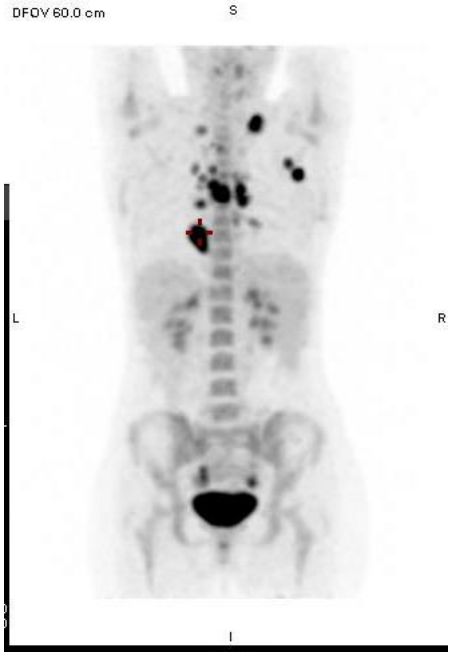
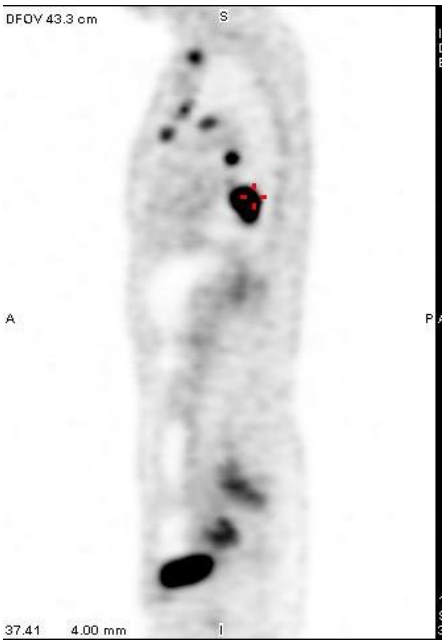
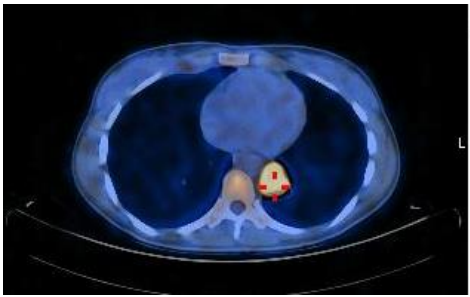
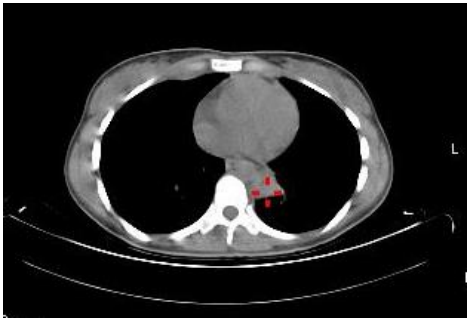
# Baseline imaging



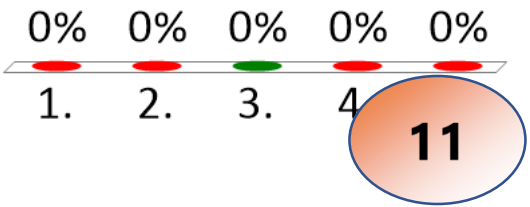



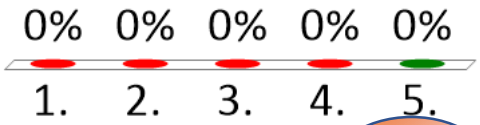
**Q1) Based on the CT and PET/CT what stage of the Hodgkin lymphoma is most likely?**

1. Stage IIA
2. Stage IIA bulky
3. Stage IVA lung involvement
4. Stage IVA bone marrow involvement
5. Stage IIB



# Q2) Based on the stage what is the preferred frontline treatment?

1. 2 × ABVD + radiotherapy (RT) 20 Gy
2. 2 × ABVD + RT 30 Gy
3. 2 × eBEACOPP + 4 × ABVD without interim PET
4. 6 × ABVD without interim PET
5. 6 × ABVD with interim PET

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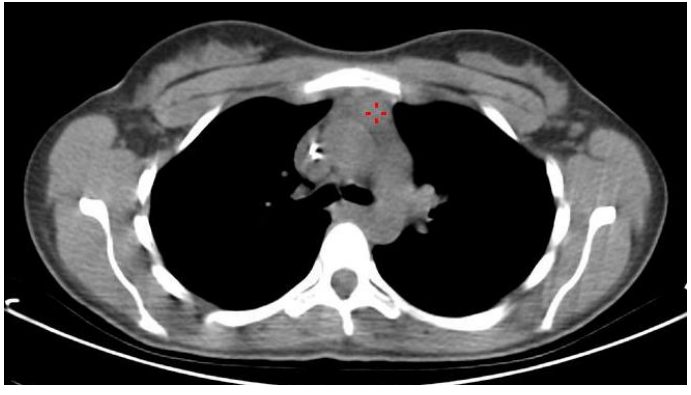
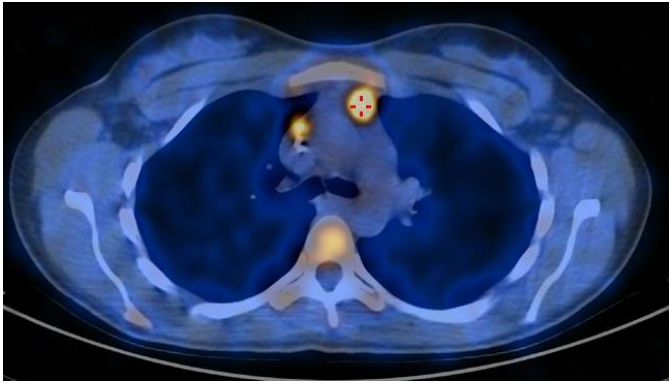
# Frontline treatment

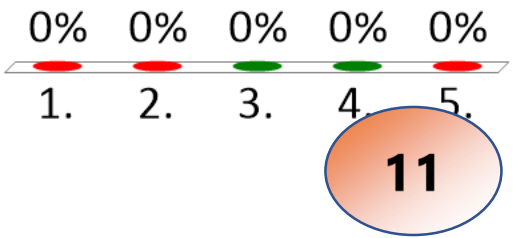
- 2 × ABVD without significant toxicity
- Interim PET/CT: Stable mediastinal, mammary and lymph node uptake
- No symptoms





# Q3) Based on age and clinical history what is the preferred salvage treatment?

1. Brentuximab Vedotin
2. High dose chemotherapy (HCT) without autologous stem cell transplant (ASCT)
3. HCT and ASCT
4. eBEACOPP
5. Allogeneic transplant



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## Salvage treatment

- IGEV salvage chemotherapy × 2 cycles were given without toxicity
- Peripheral stem cells were collected after 2 cycles of IGEV

- CT and PET after 2 cycles of IGEV: stable mediastinal and mammary nodes: volume and uptake. No longer any lung uptake

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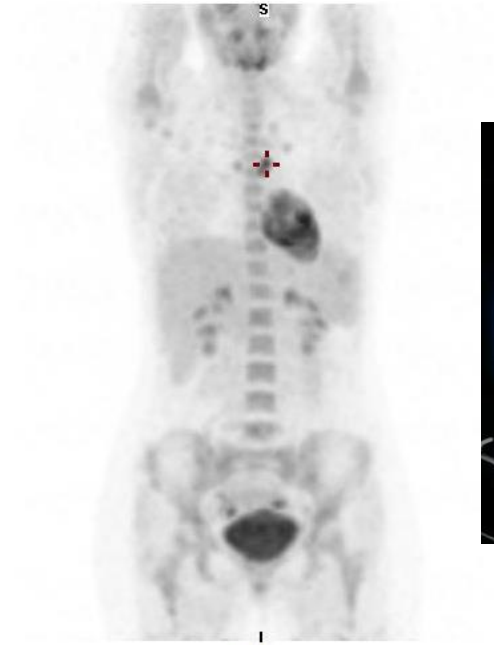
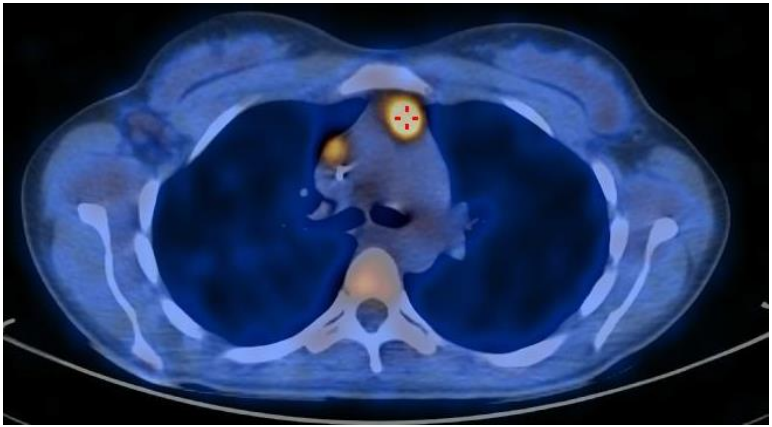
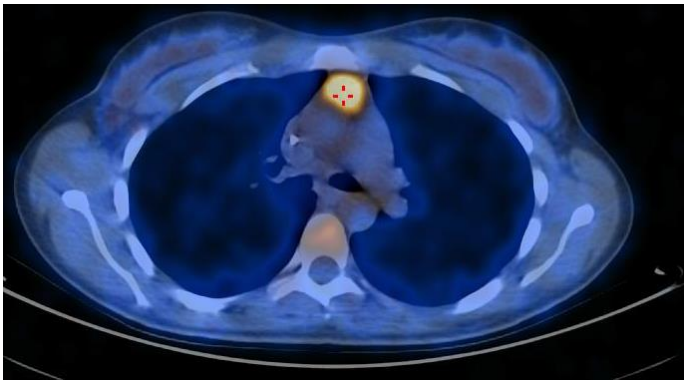
# Imaging after 1st salvage treatment

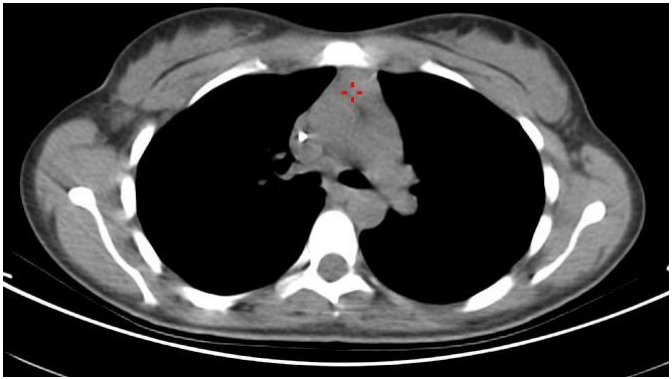


# 2nd salvage treatment

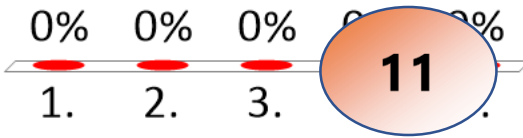
- 4 standard doses of Brentuximab 1.8 mg/kg every three weeks were given
- No haematological or neurological toxicity
- CT and PET scan after 4 doses: stable uptake and increased mediastinal volume





**Q4) Based on age, CT and PET scan and previous treatment what is next preferred strategy?**

1. Proceed with 4 more Brentuximab Vedotin followed by ASCT if CR or PR
2. ASCT
3. Allogeneic stem cell transplant
4. PD1 inhibitor
5. RT



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# 3rd salvage treatment

- She was enrolled in Keynote 087 study with pembrolizumab 200 mg every 3 weeks
- No haematological toxicity
- Mild hypothyroidism not symptomatic, no treatment
- CT and PET scan after 4 doses: No uptake

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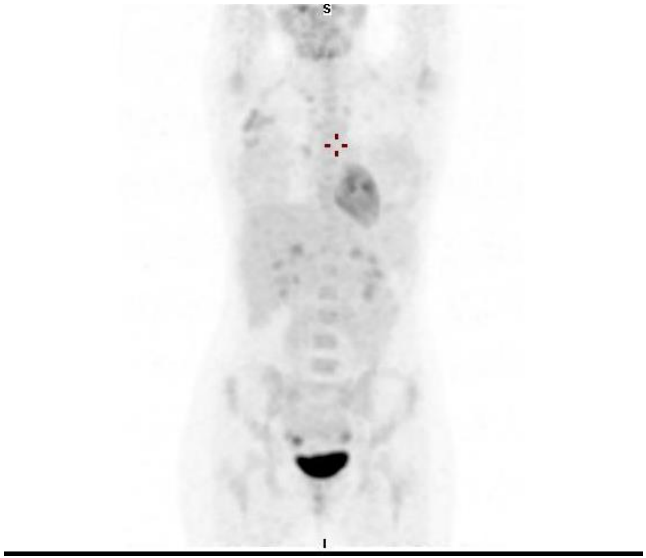
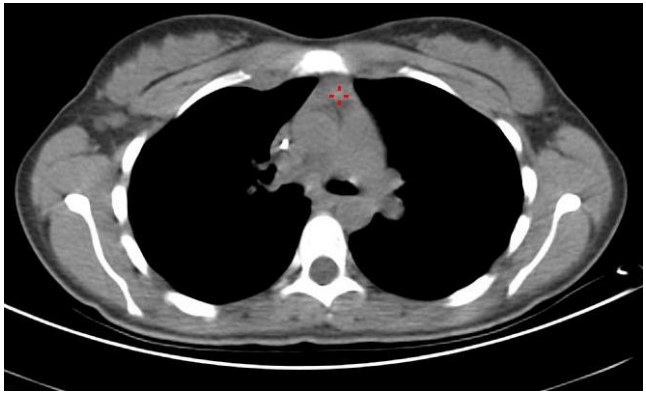
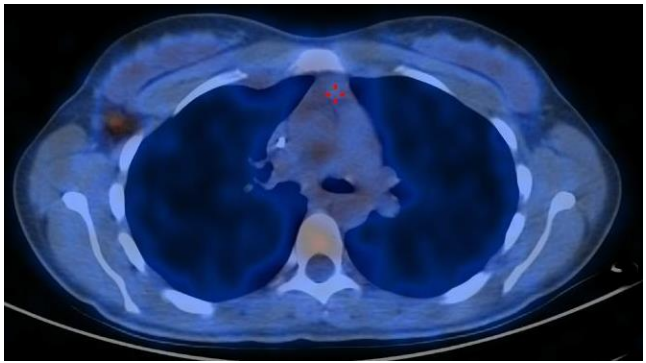
# Imaging after 3rd salvage treatment

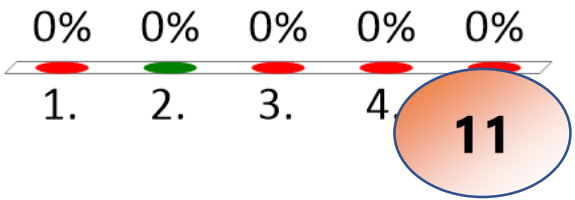




**Q5) Based on age, CT and PET scan and previous treatment what is the preferred strategy at this point?**

1. Continous PD1 inhibitor without transplant
2. ASCT
3. ASCT with brentuximab consolidation
4. RT
5. Allogeneic stem cell transplant

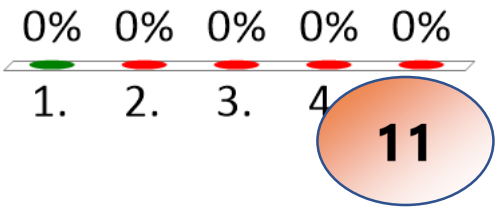


# Follow up

- ASCT was performed after 10 doses of pembrolizumab with FEAM (Fotomustine, Etoposide, Cytarabine, Melphalan) conditioning regimen
- Haematologic recovery was quick: 13 days for neutrophils >0.5 × $10^9$/l and 14 days for platelets >50 × $10^9$/l
- Mucositis grade 2
- PUO treated with broad spectrum antibiotic with resolution
- CT and CT/PET scan after ASCT: no uptake
- Continuing CR at 32 months

**Q6) Based on age, CT and PET scan and previous treatment what is the preferred strategy at this point?**

1. Follow-up
2. Brentuximab consolidation
3. Allogeneic transplant
4. RT
5. PD1 inhibitor consolidation



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# Feedback

Q1 Lung lesion is extranodal. The stage is IV without B symptoms

Q2 Standard treatment in advanced stage can be 6 × ABVD with interim PET or 2 × eBEACOPP with interim PET and de-escalation to ABVD in PET-2 negative

Q3 HDT + ASCT or eBEACOPP (after ABVD) are the standard treatment for PET-2 non-responsive HD

Q4 Brentuximab can be used to obtain clinical response before ASCT. If not effective PD1 inhibitor Pembrolizumab can be used before ASCT

Q5 In patients with CR after PD1 inhibitors, ASCT can be used as consolidation

Q6 In patients whi are not responsive to BV before ASCT, consolidation with BV after ASCT is not indicated

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# Discussion

- 6 ABVD or eBEACOPP with PET driven strategy is the standard treatment for advanced stage HD
- In patients with PET2 positive uptake HDT followed by ASCT or eBEACOPP are considered the best salvage strategy.
- CR status at ASCT is predictive of outcome (5-yr EFS: 75% vs 31%). Extranodal disease and primary refractory or relapsed disease in under a 1 yr are also risk factors
- Brentuximab Vedotin can be used after 1st salvage to obtain the best response before ASCT
- In patients without response after BV PD1 inhibition with pembrolizumab should be considered before ASCT

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