



The young side of **LYMPHOMA**

gli under 40 a confronto

Reggio Emilia, Hotel Mercure Astoria
2-3 ottobre 2026

Linfomi Cutanei Il punto di vista del radioterapista

Erica Maria Cuffini

Radioterapia U – Città della Salute e della Scienza di Torino



Disclosures of Erica Maria Cuffini

I have no COI to disclose

Primary Cutaneous Lymphoma – a clinical case (1)

M.M., 81 years old, male

Previous IHD, DM, HBV infection (HBV DNA negative at last blood test)

Oct – Dec 24:

Multiple skin lesions, severe pruritus, sub-erythrodermic involvement

Skin biopsy consistent with **Sézary syndrome (SS)**; **CD30 expression in 10% of neoplastic cells**

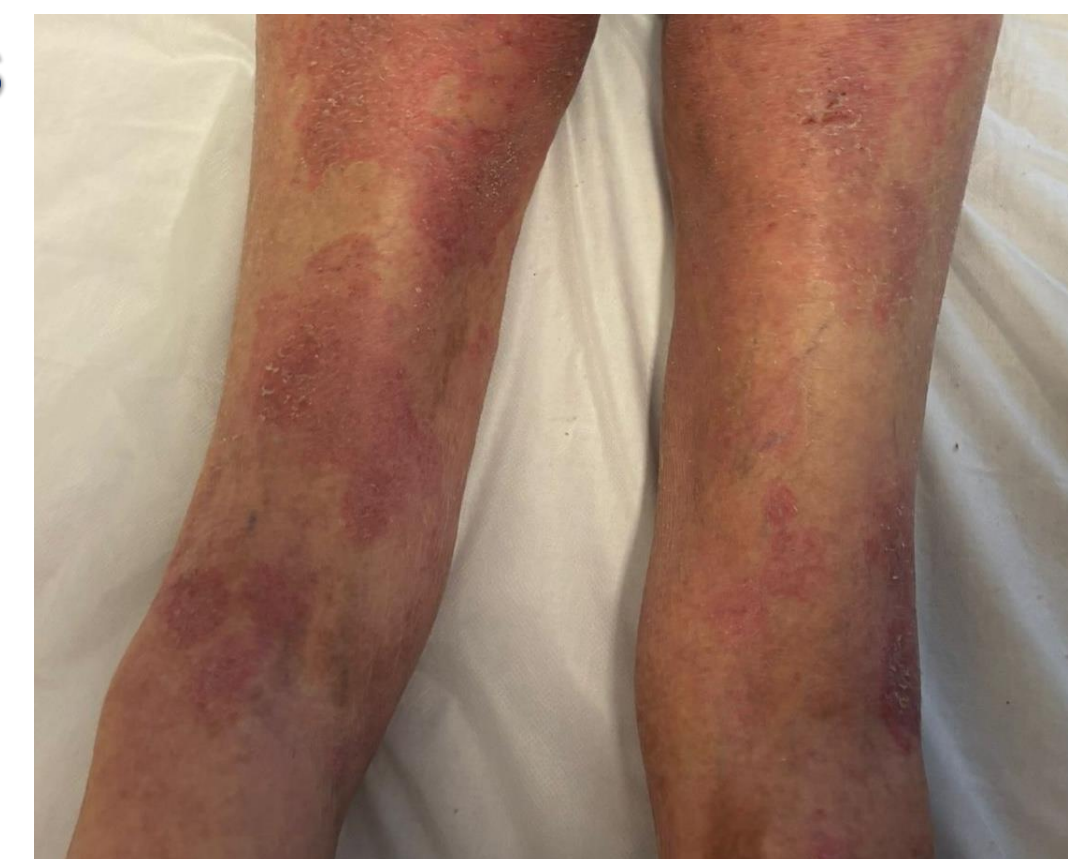
Jan–Oct 25: **Phototherapy** (9 sessions)

Mar–Aug 25: **Acitretin**, discontinued due to lack of efficacy

Nov 25: **Mogamulizumab**, with an initial good response

Jan 26: nodal **PD** after 7 cycles of mogamulizumab

Feb 26: diffuse cutaneous **PD**, particularly with a large ulcerated nodular-plaque lesion on the left flank



Referred to Radiation Oncologist for evaluation

Primary Cutaneous Lymphoma – a clinical case (1)

M.M., 81 years old, male

Radioterapy assessment

- General condition: limited mobility, ambulatory with assistance, **ECOG PS 2**
- Symptoms: severe **pruritus**; poorly controlled **pain**
- Physical examination: suberythrodermic involvement with **diffuse** patches and plaques; **large raised ulcerated nodular lesion on the left flank** and small ulcerated lesion on the right flank

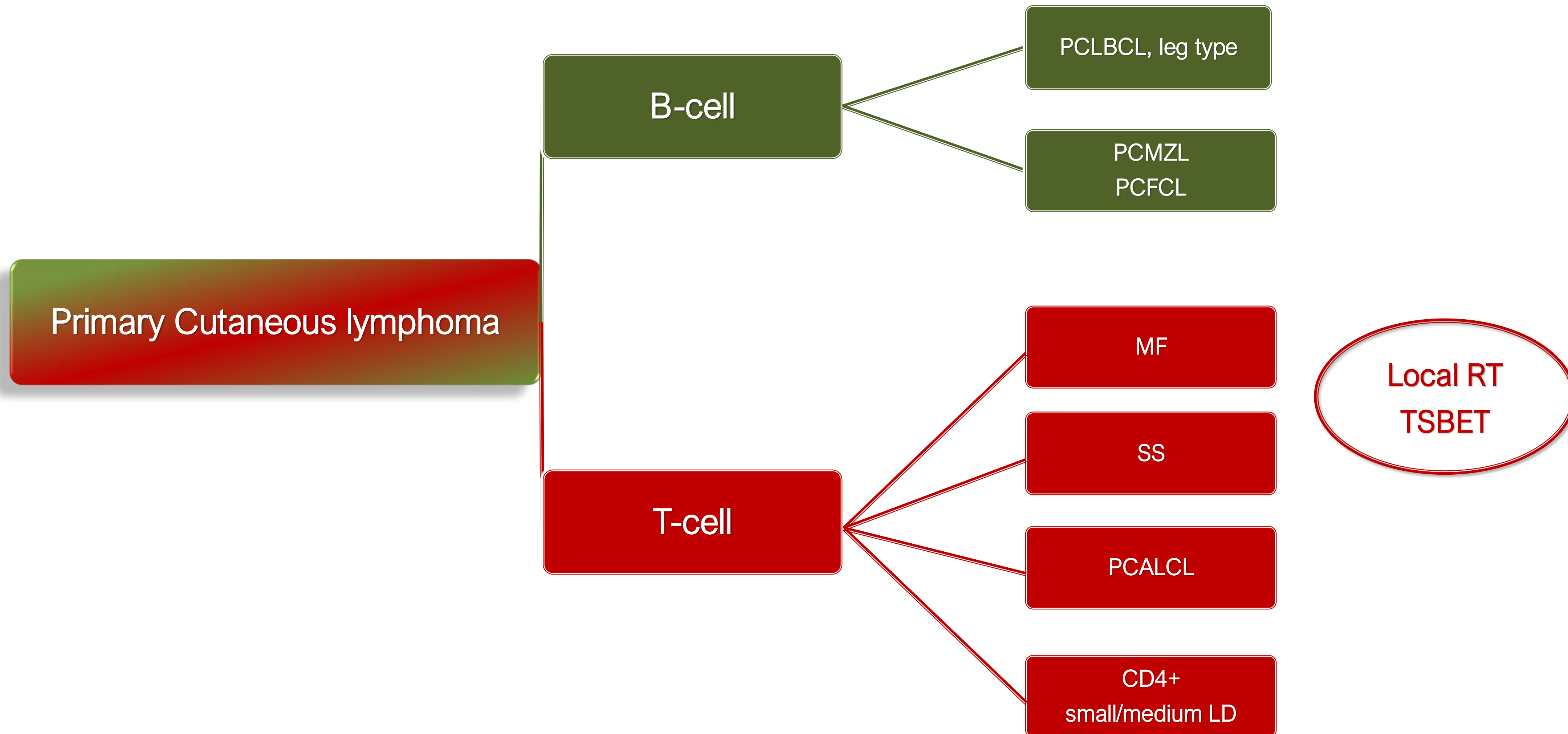


Primary Cutaneous Lymphoma – a clinical case (1)

The patient was referred for radiation oncology evaluation
What do you think was the treatment choice?

- A. Local RT 24 Gy/12 fx electron beam radiotherapy on the gross lesion
- B. Ultrahypofractionated TSEBT 8 Gy/2 fx, weekly +/- boost on the gross lesion
- C. Low-dose TSEBT 12 Gy/8 fx +/- boost on the gross lesion
- D. Local RT 4 Gy/2 fx electron beam radiotherapy on the gross lesion

TSEBT → Total Skin Electron Beam Therapy



Mycosis Fungoides (MF) & Sézary Syndrome (SS)

Stage	Skin (T)	Nodes (N)	Viscera (M)	Blood (B)
IA	T1	N0	M0	B0-B1
IB	T2	N0	M0	B0-B1
IIA	T1-T2	N1-N2	M0	B0-B1
IIB	T3	N0-N2	M0	B0-B1
IIIA	T4	N0-N2	M0	B0
IIIB	T4	N0-N2	M0	B1
IVA1	T1-T4	N0-N2	M0	B2
IVA2	T1-T4	N3	M0	B0-B2
IVB	T1-T4	N0-N3	M1	B0-B2

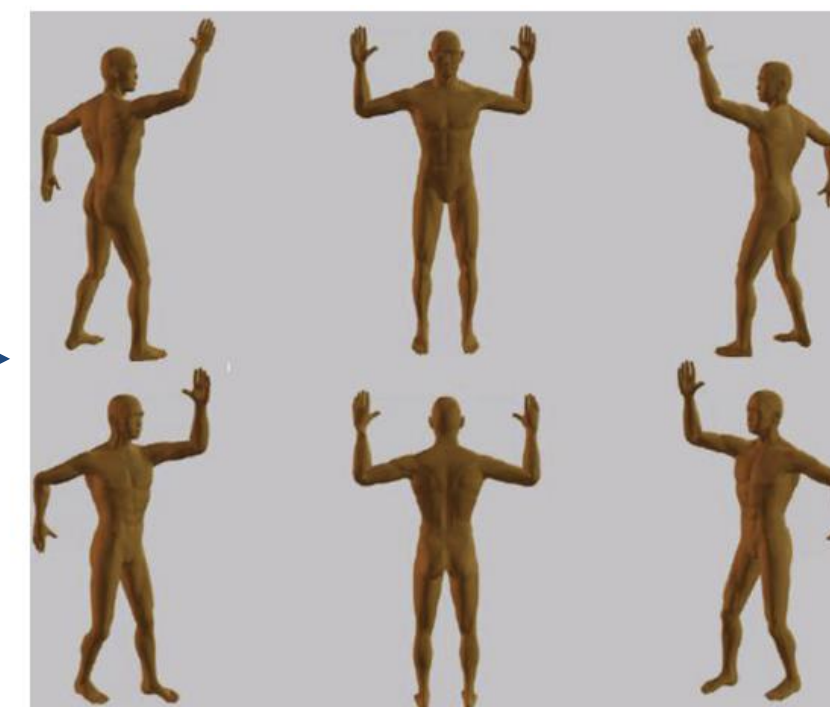
Local RT

~ 24 Gy/12 fr, 8 Gy/2 fr

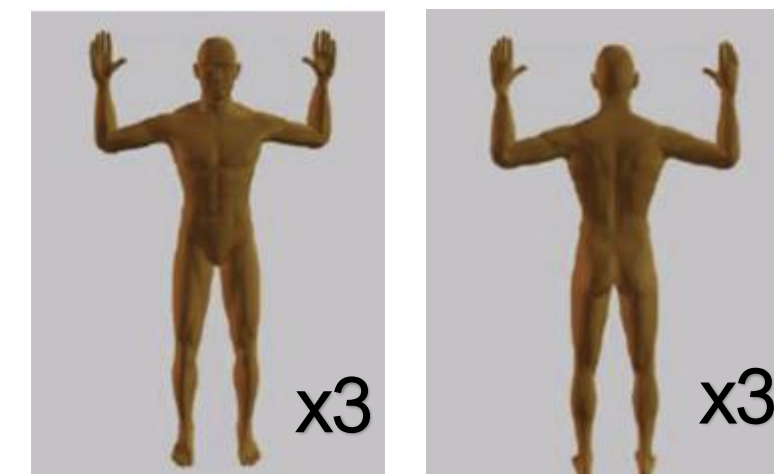
Local RT
palliative/symptomatic intent

~ 8 Gy/2 fr, 12 Gy/3 fr, 15 Gy/5 fr

Total Skin Electron Beam Therapy, TSEBT



Stanford technique



Clinical practice @
Radioterapia U
AOU CDSS Torino
Molinette

Potentially curative

Symptoms relief

Early stages

Advanced stages

Total Skin Electron Beam Therapy

Study	Pts	Population	TSEBT dose	ORR	CR
<i>Jones et al., 1994</i>	146	T1–T4 MF	30–35 Gy	82%	27%
<i>Navi et al., 2011</i>	180	T2–T3 MF	30–40 Gy	100%	60% overall; 75% T2, 47% T3
<i>Hoppe et al., 2015</i>	33	IB–IIIA MF	12 Gy / 12 fx	88%	27%
<i>Kamstrup et al., 2015</i>	21	IB–IV MF/SS	10 Gy / 10 fx	95%	29%
<i>Morris et al., 2017</i>	103	IB–IV MF	12 Gy / 8 fx	87%	18%
<i>Elsayad et al., 2023</i>	18	IIB–IV MF/SS	8 Gy / 2 fx	88.9%	16.9%

35-40 Gy

Low-dose TSEBT

10-12 Gy/8-12 fx

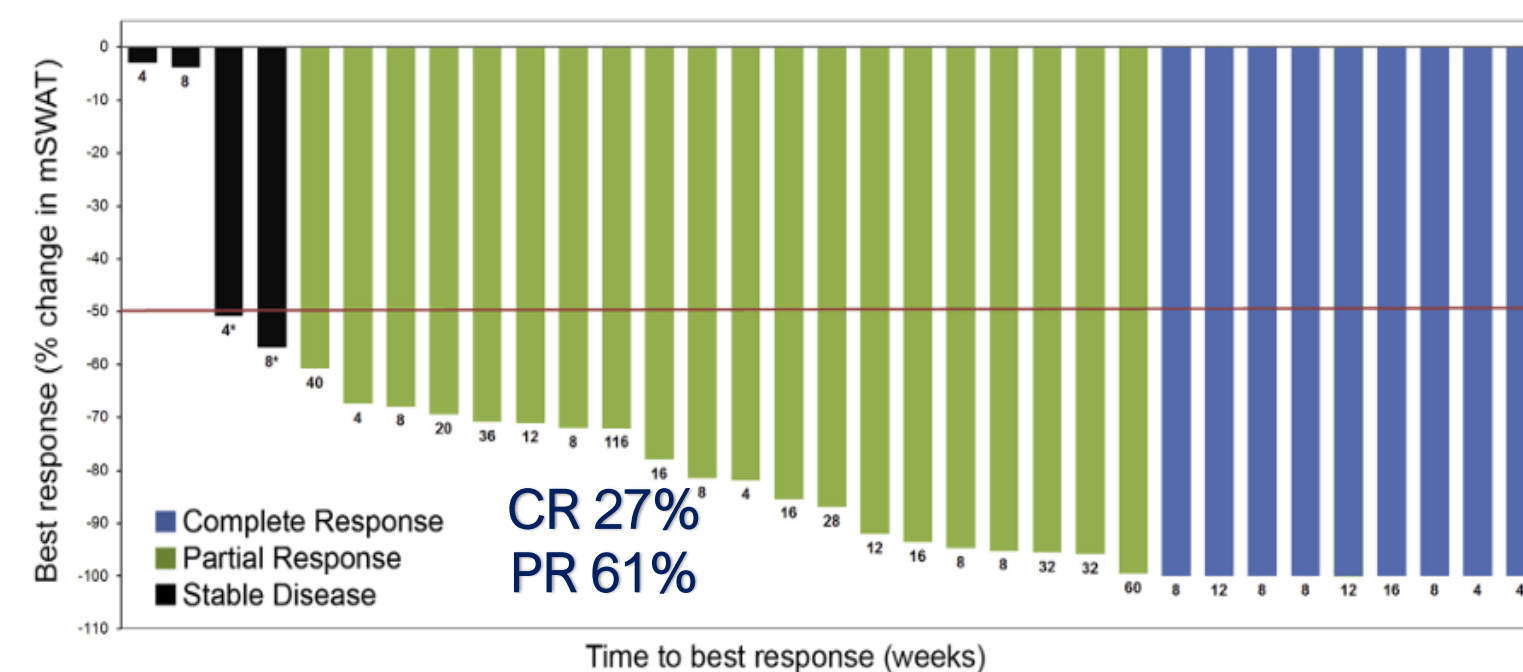
Current SoC

High response rate
Favorable toxicity profile

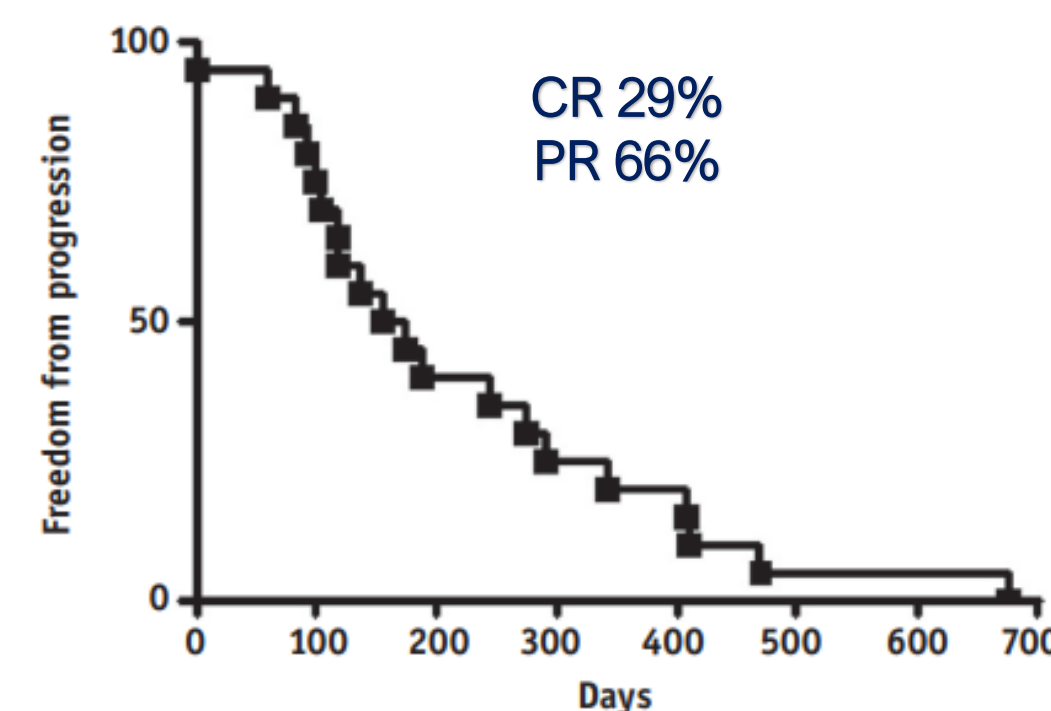
Ultrahypofractionated RT

8 Gy/2 fx - weekly

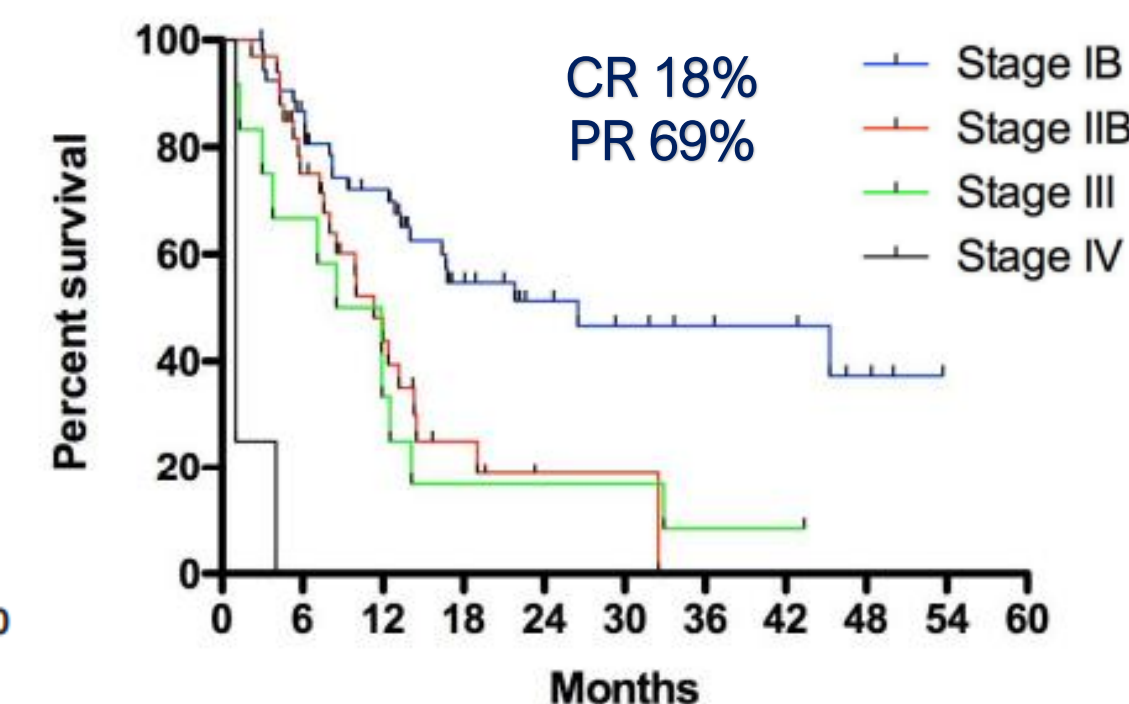
Good disease control
Good symptom palliation
Acceptable toxicity
Unfit patients



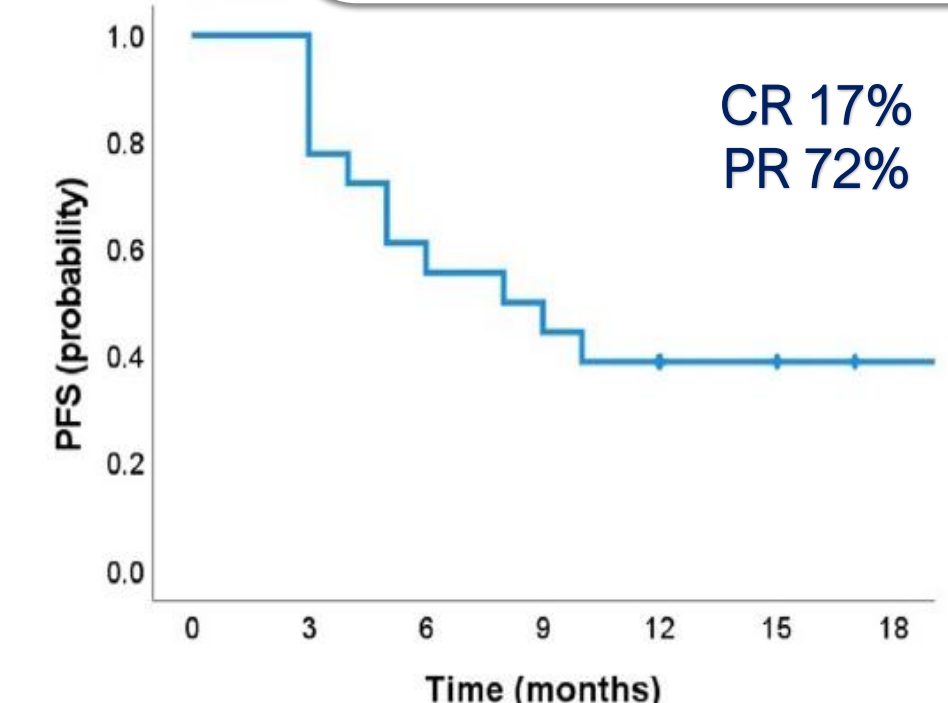
Hoppe et al., J Am Acad Dermatol 2015



Kamstrup et al., IJROBP 2015



Morris et al., IJROBP 2015



Elsayad et al., IJROBP 2023

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Correct answer: B

Primary Cutaneous Lymphoma – a clinical case (1)

M.M., 81 years old, male

Boost on the gross lesion
15 Gy/5 daily fractions

1 week after

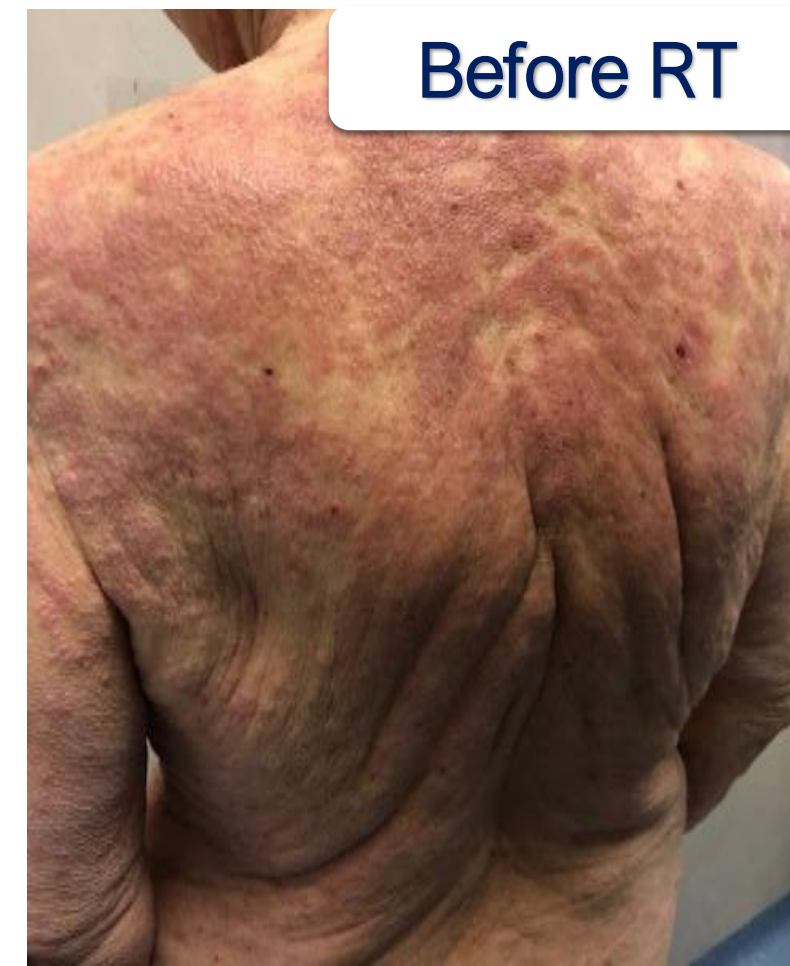
TSEBT
8 Gy/2 fractions, weekly

3 months after

✓ Well tolerated
✓ Excellent compliance

- Erythema
- Alopecia
- Xerosis

PR of skin lesions
Remission of pruritus
Remission of pain



Total Skin Electron Beam Therapy

INTERNATIONAL JOURNAL OF
RADIATION ONCOLOGY • BIOLOGY • PHYSICS

CLINICAL INVESTIGATION

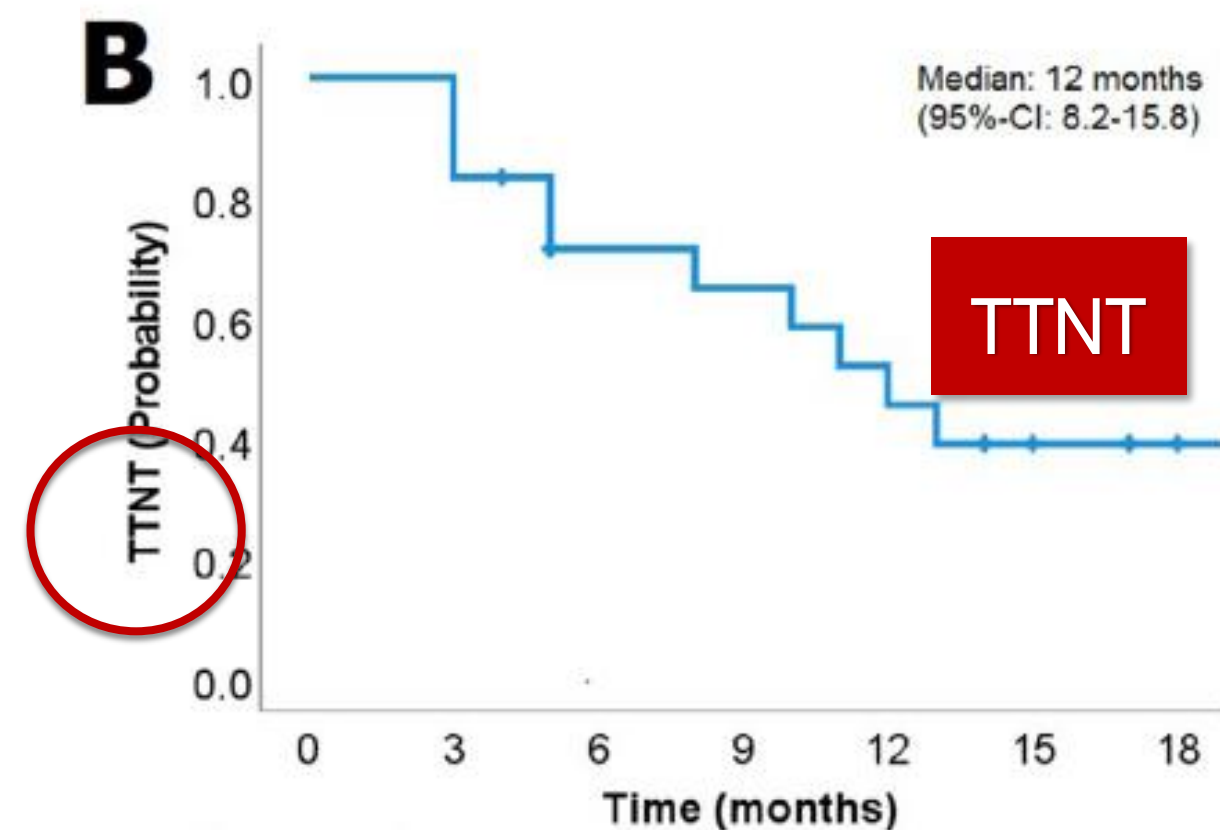
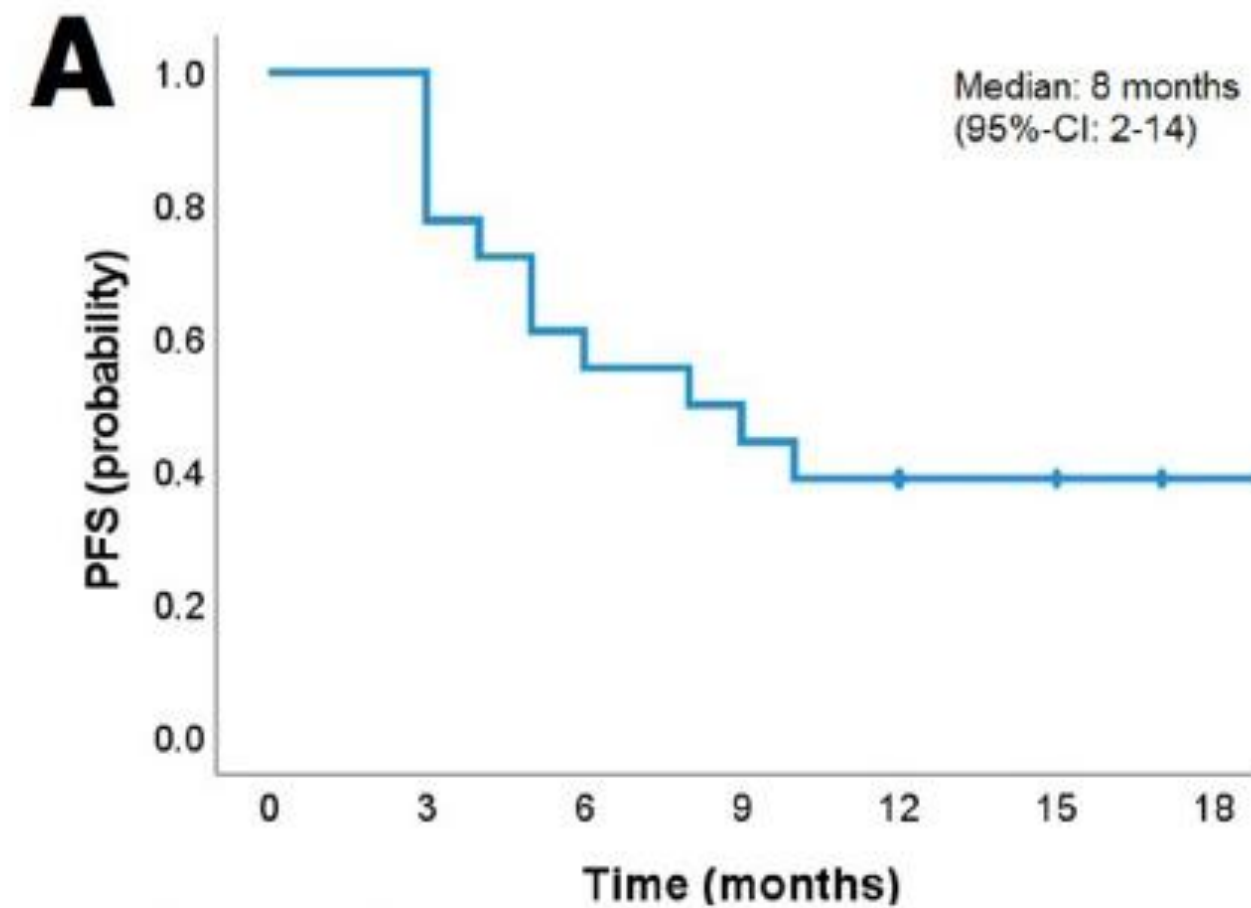
Ultrahypofractionated Low-Dose Total Skin Electron Beam in Advanced-Stage Mycosis Fungoides and Sézary Syndrome

Khaled Elsayad, PhD,* Carsten Weishaupt, PhD,[†] Christos Moustakis, PhD,* Moritz Fabian Danzer, MSc,[‡] Elisa Christina Müller, MD,* Daniel Rolf, MD,* Rene Stranzenbach, PhD,[§] Elisabeth Livingstone, PhD,^{||} Nina Booken, PhD,[¶] Rudolf Stadler, PhD,[#] and Hans Theodor Eich, PhD*

ORR 89%

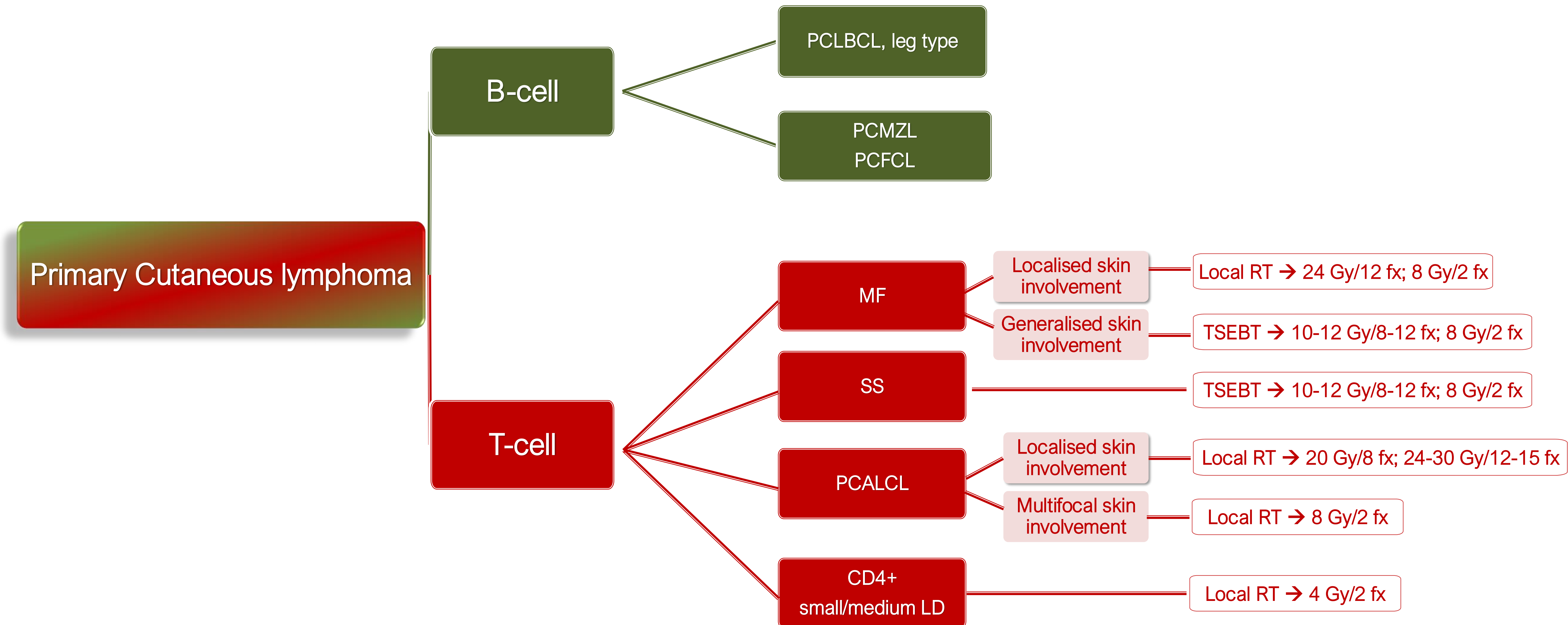
CR 17%

PR 72%



AE	Grade 1, no. (%)	Grade 2, no. (%)	Grade 3, no. (%)
Acute/subacute (≤ 3 mo)*	100%	50%	
Erythema	6 (33)	6 (33)	
Alopecia	8 (44)	2 (11)	
Fatigue	4 (22)		
Skin edema	4 (22)	2 (11)	
Skin blisters	3 (17)		
Nail changes	3 (17)	2 (11)	
Xerosis cutis	3 (17)		
Nausea	1 (6)		
Sepsis			1 (6)
Chronic (> 3 mo) [†]			
Erythema	4 (22)		
Alopecia	4 (22)		
Fatigue	2 (11)		
Nail changes	2 (11)		
Xerosis cutis	2 (11)		

Ultrahypofractionated TSEBT with 8 Gy in 2 fractions achieves good disease control and symptom palliation with acceptable toxicity, greater convenience, and fewer hospital visits. However, patients with erythroderma/SS or prior radiation therapy appear to be at higher risk of skin toxicities.



Primary Cutaneous Lymphoma – a clinical case (2)

G.E., 75 years old, male

- Apr 19: several nodular and ulcerated lesions in the left leg
- Aug 19: diagnosis of **diffuse large B-cell lymphoma “Leg type”**
- Sep 19: PET-CT scan: pathologic uptake to the lesions located in the left leg. No further uptakes

Stage: Localized disease - DLBCL Leg-type

Oct 19–Mar 20: **6 R-CHOP** with a good clinical response



After 6-RCHOP

Restaging PET-CT: **PMR, DS3** of the ulcerative area and of the nodular lesions visible in the calf and in the ankle. No appearance of new lesions.

Referred to Radiation Oncologist for evaluation

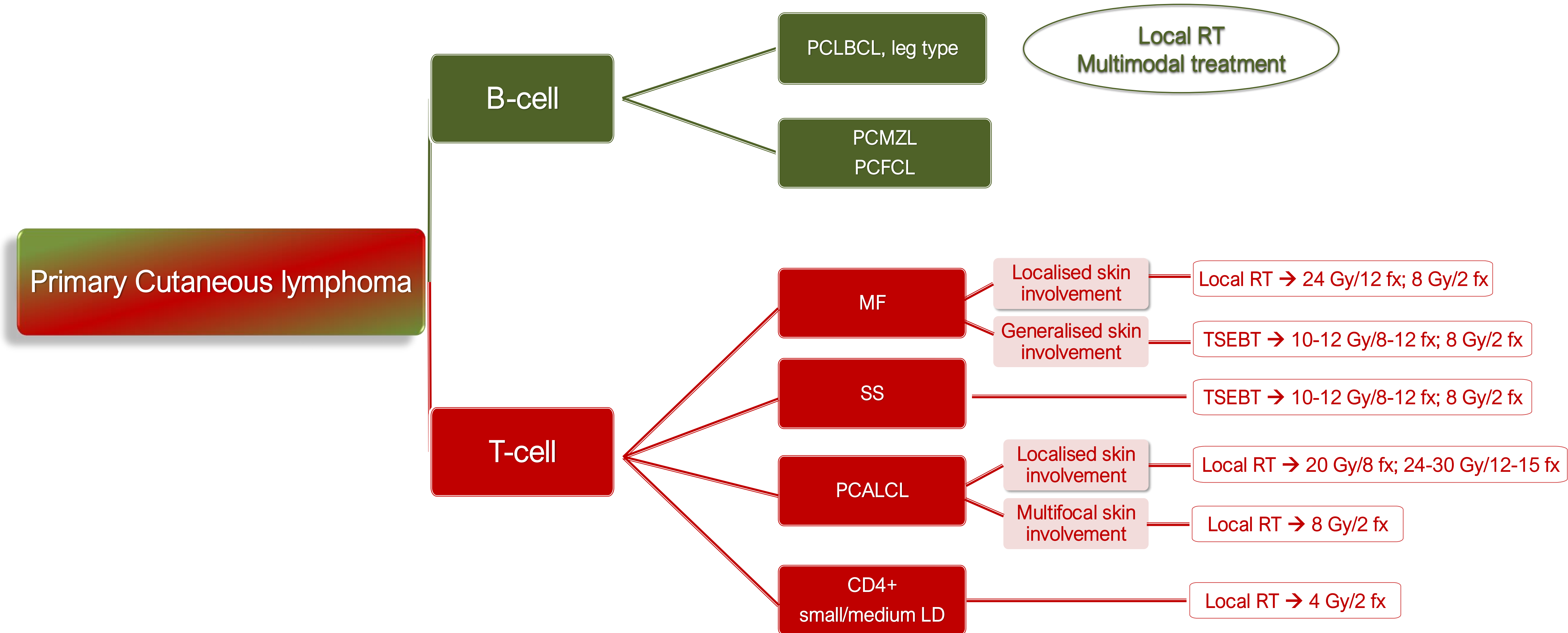


Persistent ulcerative lesion in the pretibial area; residual nodular lesions in the calf and in the ankle

Primary Cutaneous Lymphoma – a clinical case (2)

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- C. Low-dose local RT **4 Gy/2 fx**
- D. Local RT **30-36 Gy/15-18 fx**



Primary Cutaneous Diffuse Large B-Cell Lymphoma, Leg Type (PCLBCL-LT)

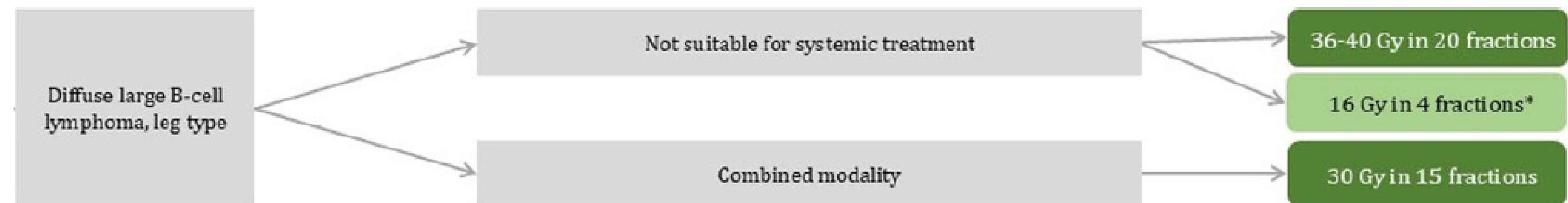
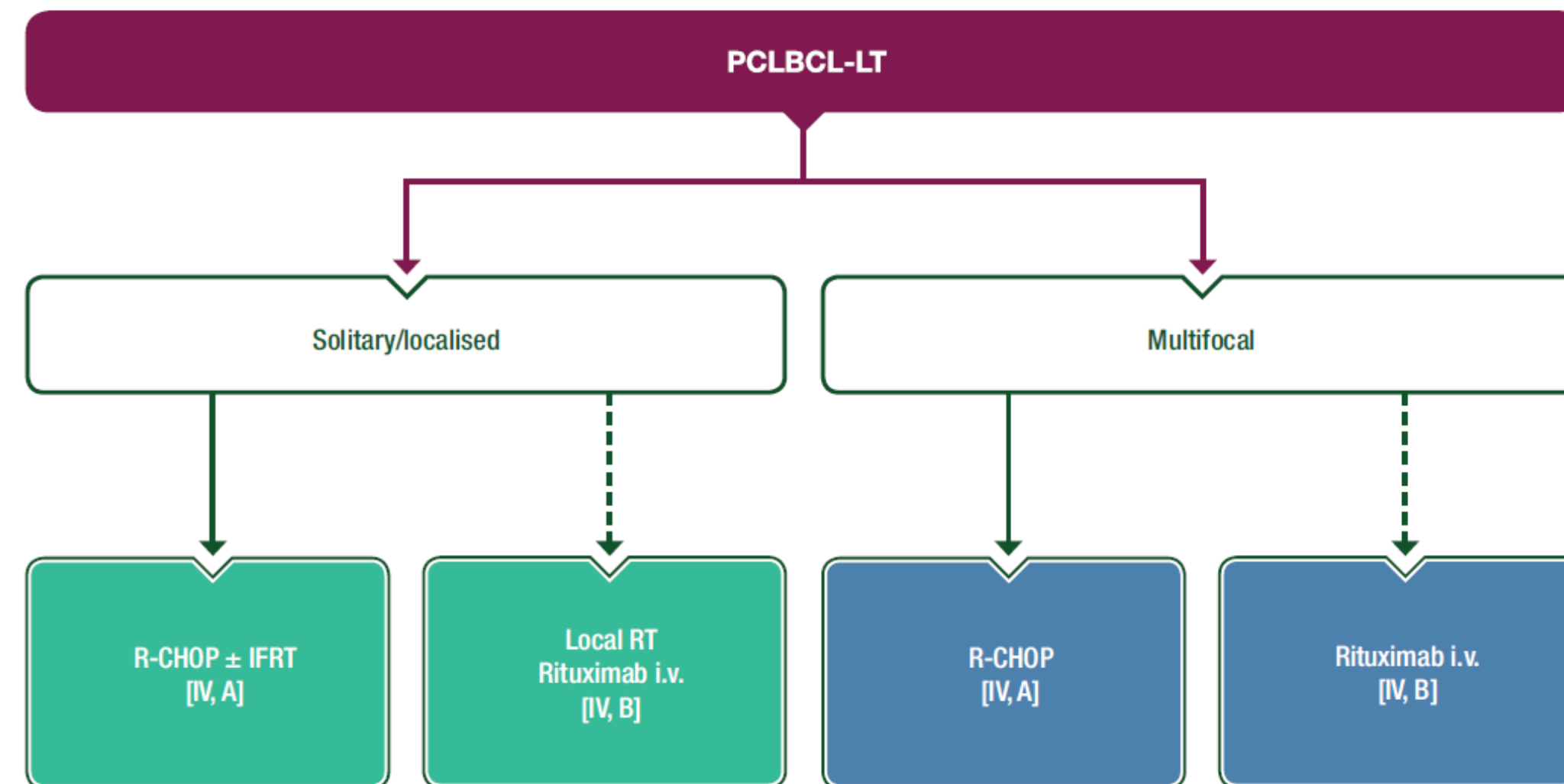
RT dose, GL recommendations

After R-CHOP

30-36 Gy in 2 Gy daily fx

No systemic treatment

40 Gy in 2 Gy daily fx



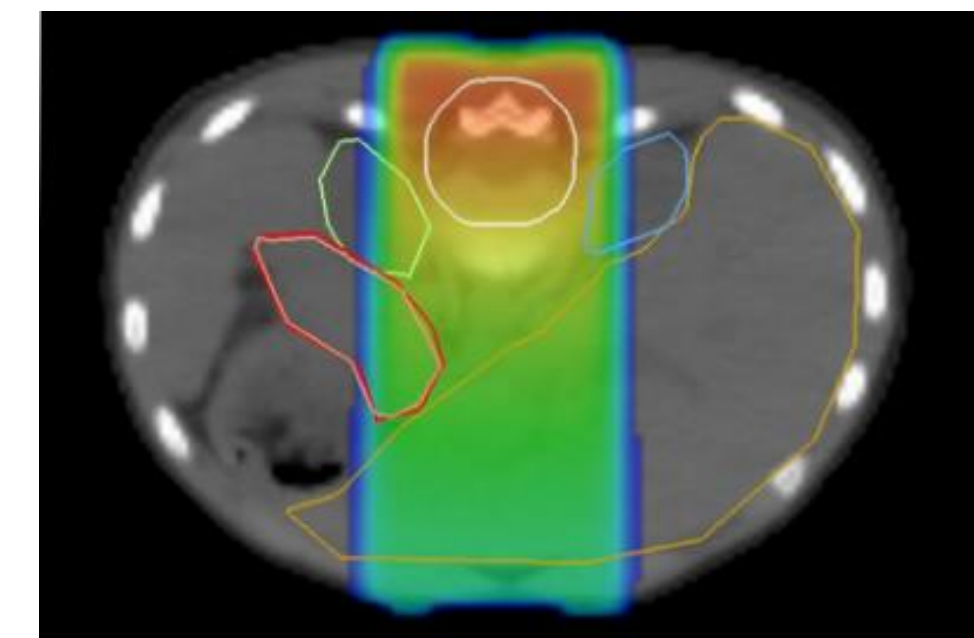
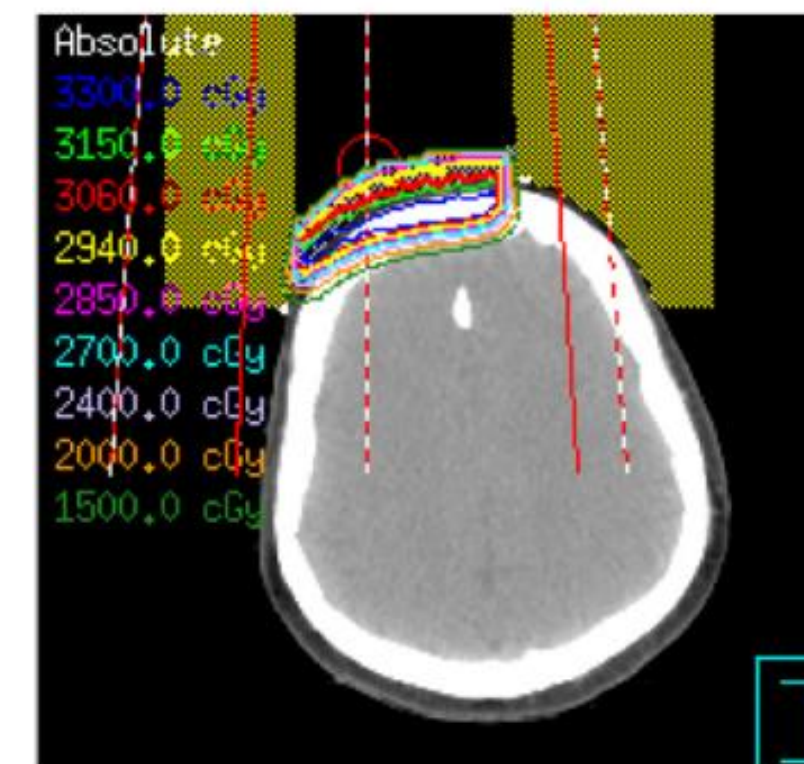
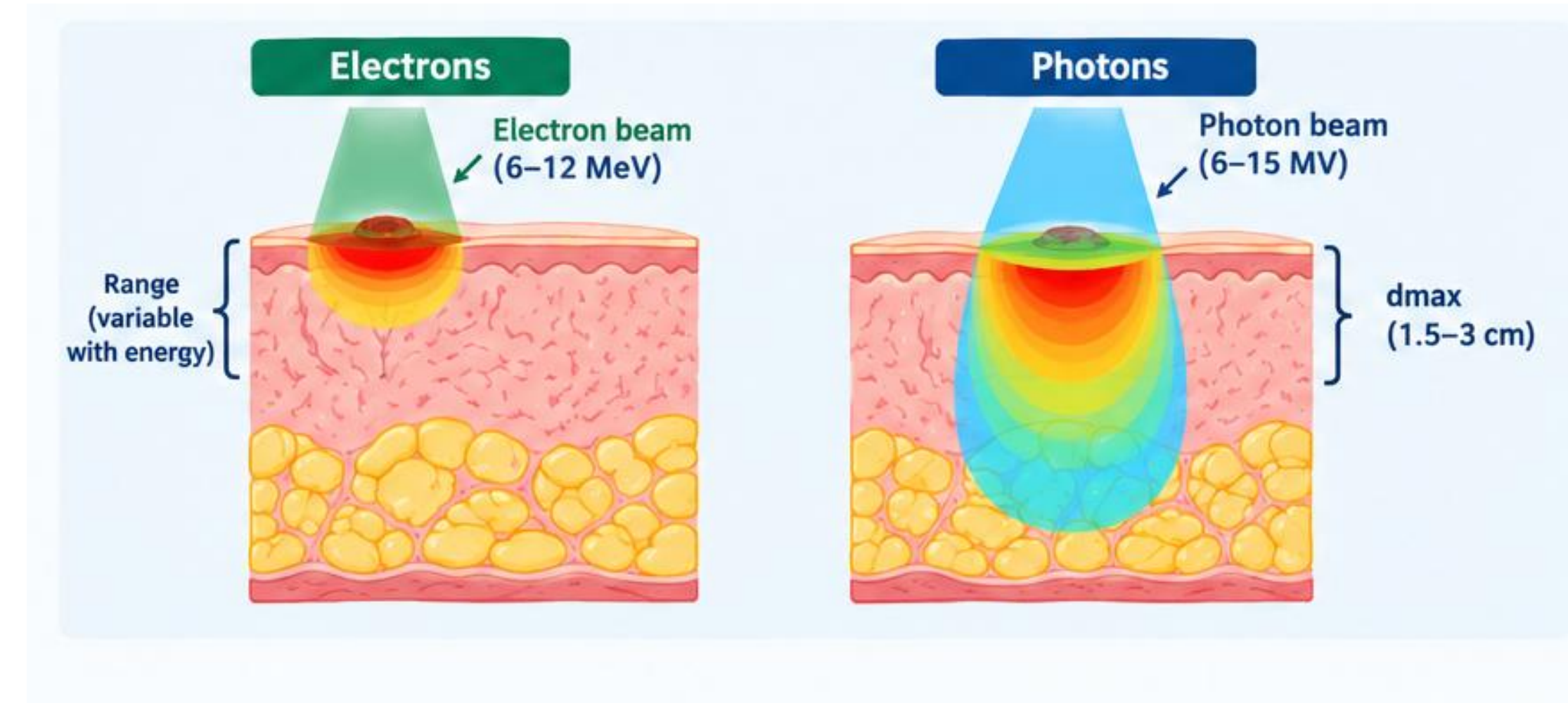
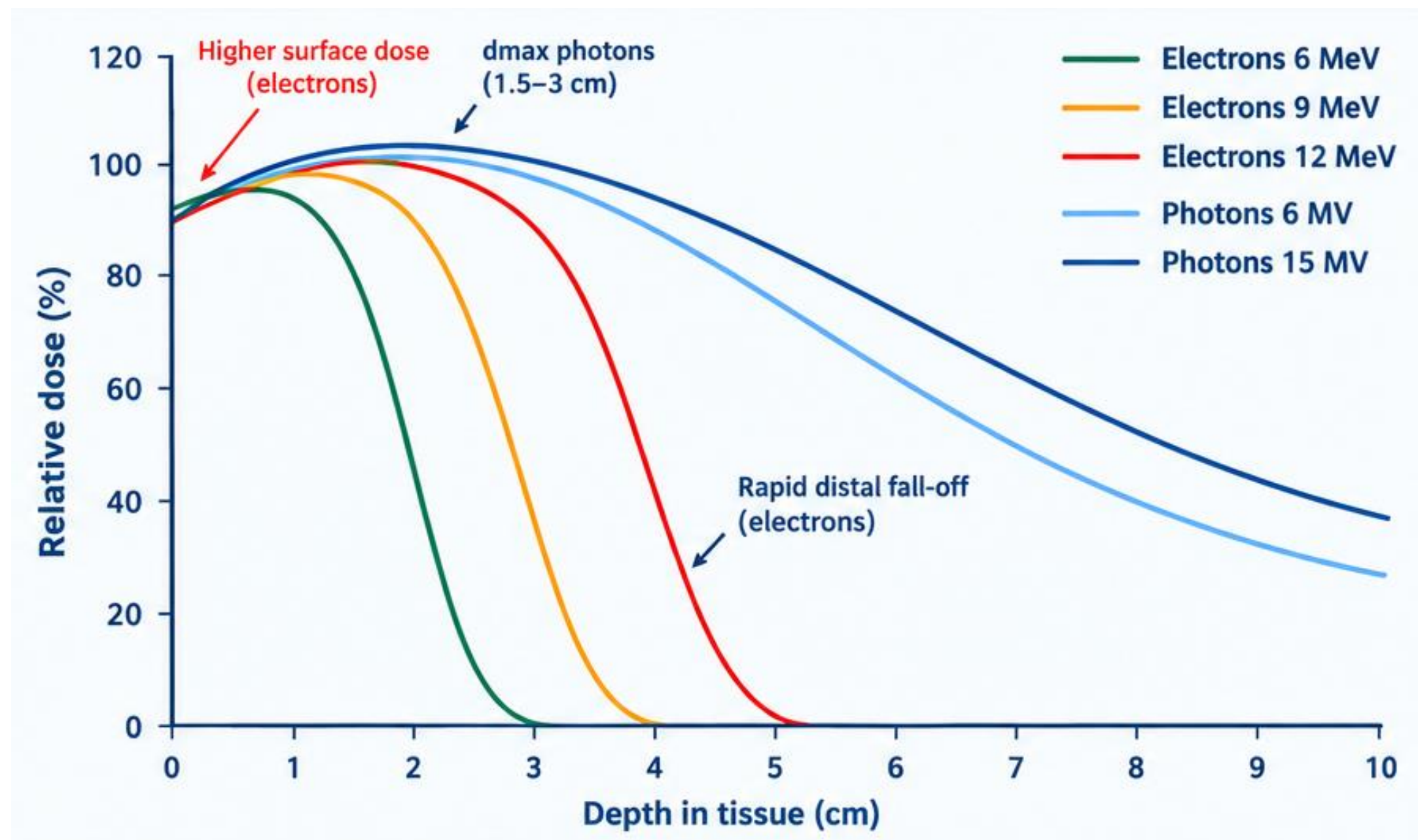
Primary Cutaneous Lymphoma – a clinical case (2)

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- D. Local RT **30-36 Gy/15-18 fx**

Correct answer: D

Electron beam or Photon beam?



Primary Cutaneous Lymphoma – a clinical case (2)

G.E., 79 years old, male

6-RCHOP

36 Gy/18 fx

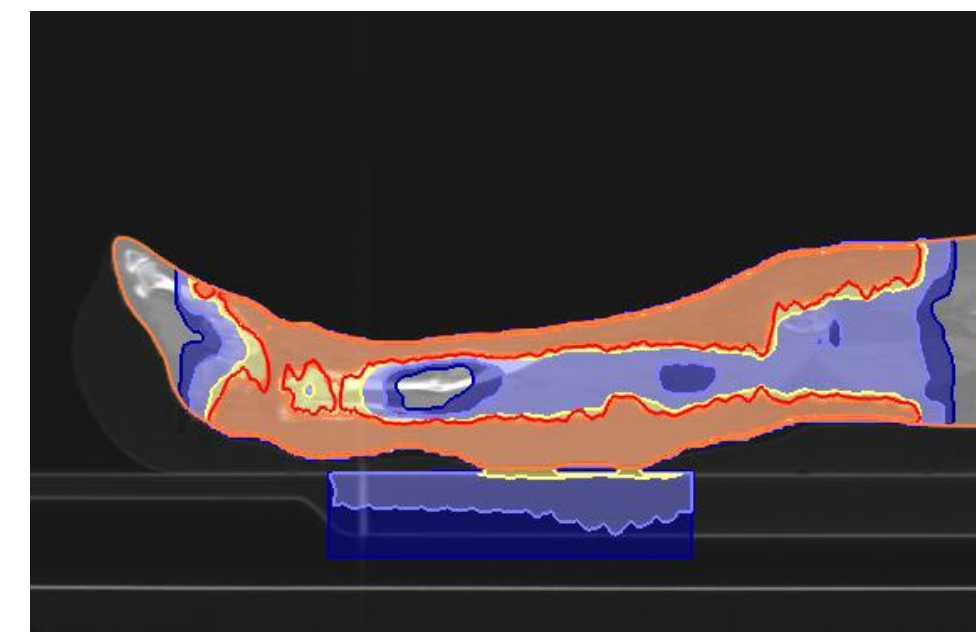
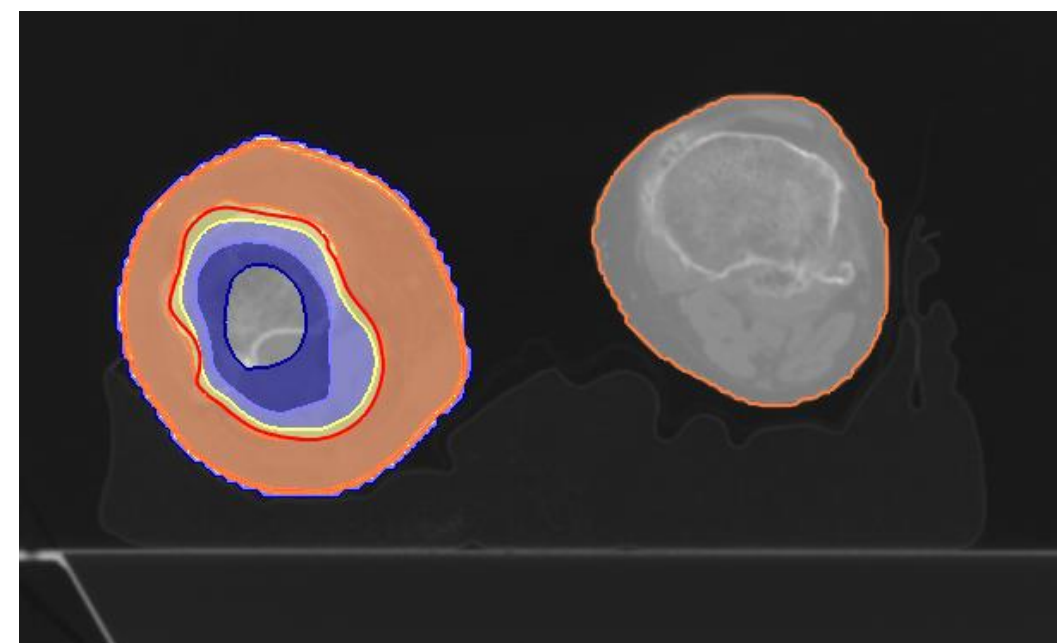
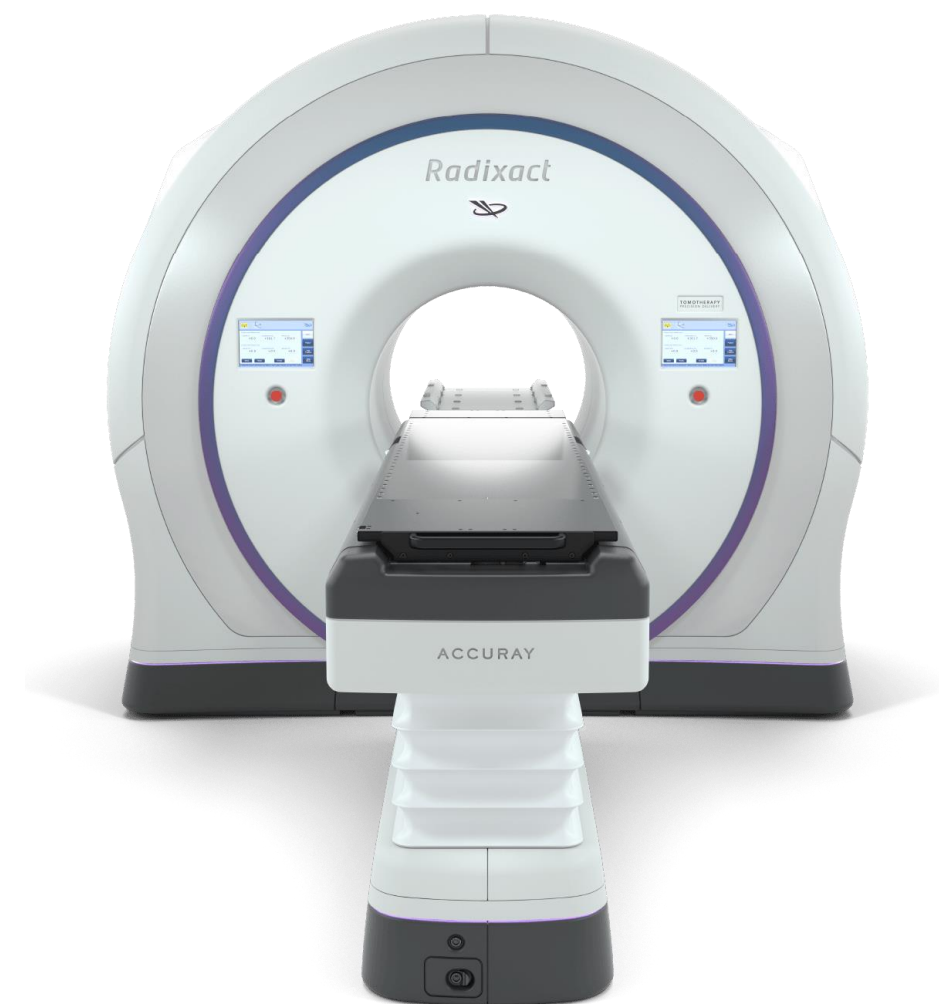
Photon Beam

Acute toxicity: G1 lymphedema and erythematous reaction 10 days after RT

Complete resolution of the side effects with local therapy 30 days after RT

July 2020 - PET-CT scan: CMR

March 2025: persistent disease remission of DLBCL leg-type



Tomotherapy allows to treat extended fields with irregularly shaped volumes through a precise and highly conformed delivery of RT dose



Modern Radiotherapy for the treatment of large cutaneous localizations of haematological malignancies: a multicenter study from the Fondazione Italiana Linfomi (TOMO-SKIN)

PI: M. Levis (UniTO) and F. Matrone (CRO AVIANO)

Aim: to evaluate feasibility, safety and efficacy of high dose-gradient techniques (IMRT/VMAT/TOMO) in the treatment of “extended” skin lesions from cutaneous B-Cell lymphomas

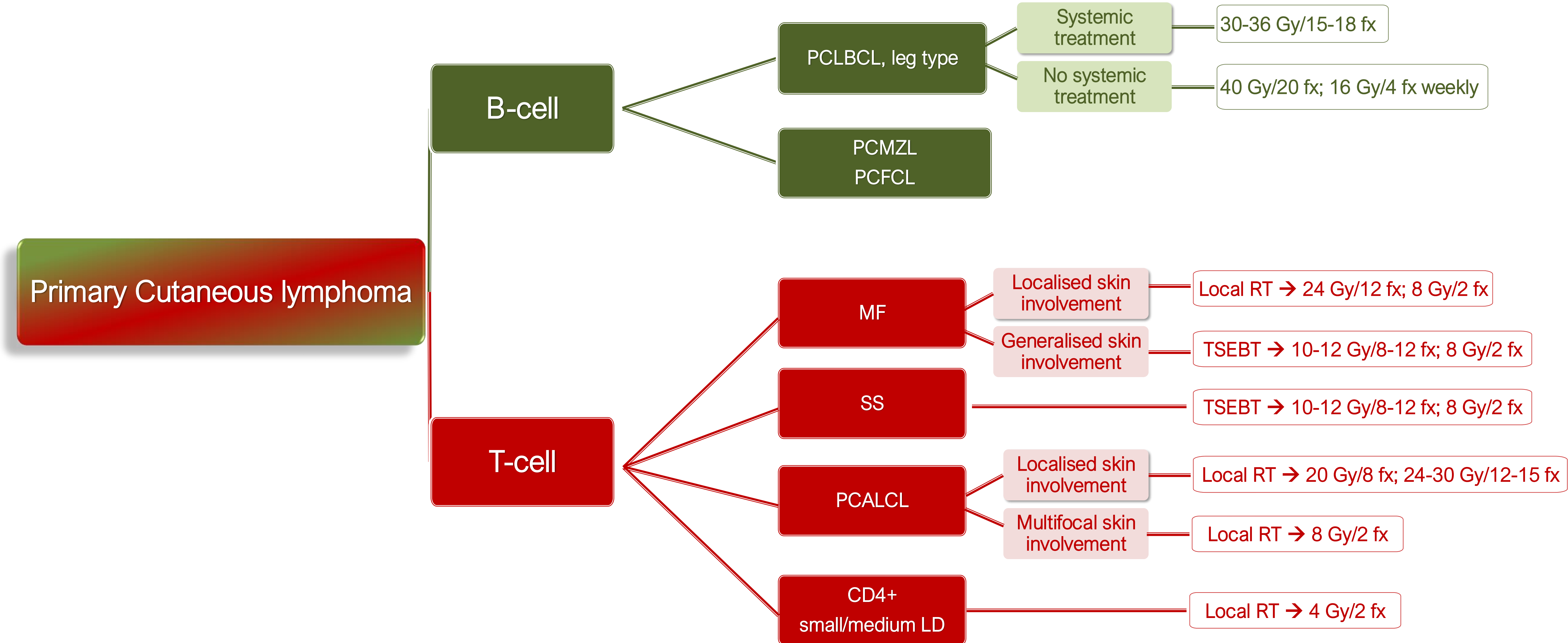
Primary Endpoints:

- Overall Response Rate (ORR)
- Estimation of Acute Toxicity (CTCAE 5.0)

Secondary Endpoints:

- Local Control (LC)
- Progression Free Survival (PFS)
- Overall Survival (OS)
- Chronic Toxicity





Primary Cutaneous Indolent Lymphomas (PCFCL, PCMZL)

Phase III randomised trial

The new Soc for indolent lymphomas: 24 Gy

Reduced dose radiotherapy for local control in non-Hodgkin lymphoma:
A randomised phase III trial ☆☆☆

Lisa Lowry^a, Paul Smith^a, Wendi Qian^b, Stephen Falk^c, Kim Benstead^d, Tim Illidge^e, David Linch^f,
Martin Robinson^g, Andrew Jack^h, Peter Hoskin^{i,*}

^a Haematology Trials Group, University College London Cancer Trials Centre, UK; ^b MRC Clinical Trials Unit, London, UK; ^c Bristol Oncology and Haematology Centre, UK; ^d Department of Oncology, Cheltenham General Hospital, Gloucestershire, UK; ^e School of Cancer and Imaging Sciences, University of Manchester, UK; ^f University College London Cancer Institute, UK; ^g Academic Unit of Clinical Oncology, Weston Park Hospital, Sheffield, UK; ^h HMDS, St. James Institute of Oncology, Leeds, UK; ⁱ Mount Vernon Cancer Centre, Department of Clinical Oncology, London, UK

Radiother Oncol 2011

LDRT: 2x2 Gy

Study	Patients / lesions	CR	Toxicity
<i>Akhtari et al., 2016</i>	8 patients / 8 lesions	100% (8/8)	No significant toxicity
<i>Neelis et al., 2009</i>	18 patients / 44 lesions	72%	No significant toxicity
<i>Ali et al., 2026</i>	75 patients / 137 lesions	77%	No grade ≥3 toxicity

Modern Radiation Therapy for Primary Cutaneous Lymphomas: Field and Dose Guidelines From the International Lymphoma Radiation Oncology Group

Curative: 24-40 Gy – Palliative: 4 Gy

LDRT in the management of PCBCCL demonstrates excellent LC rates and a favorable toxicity profile

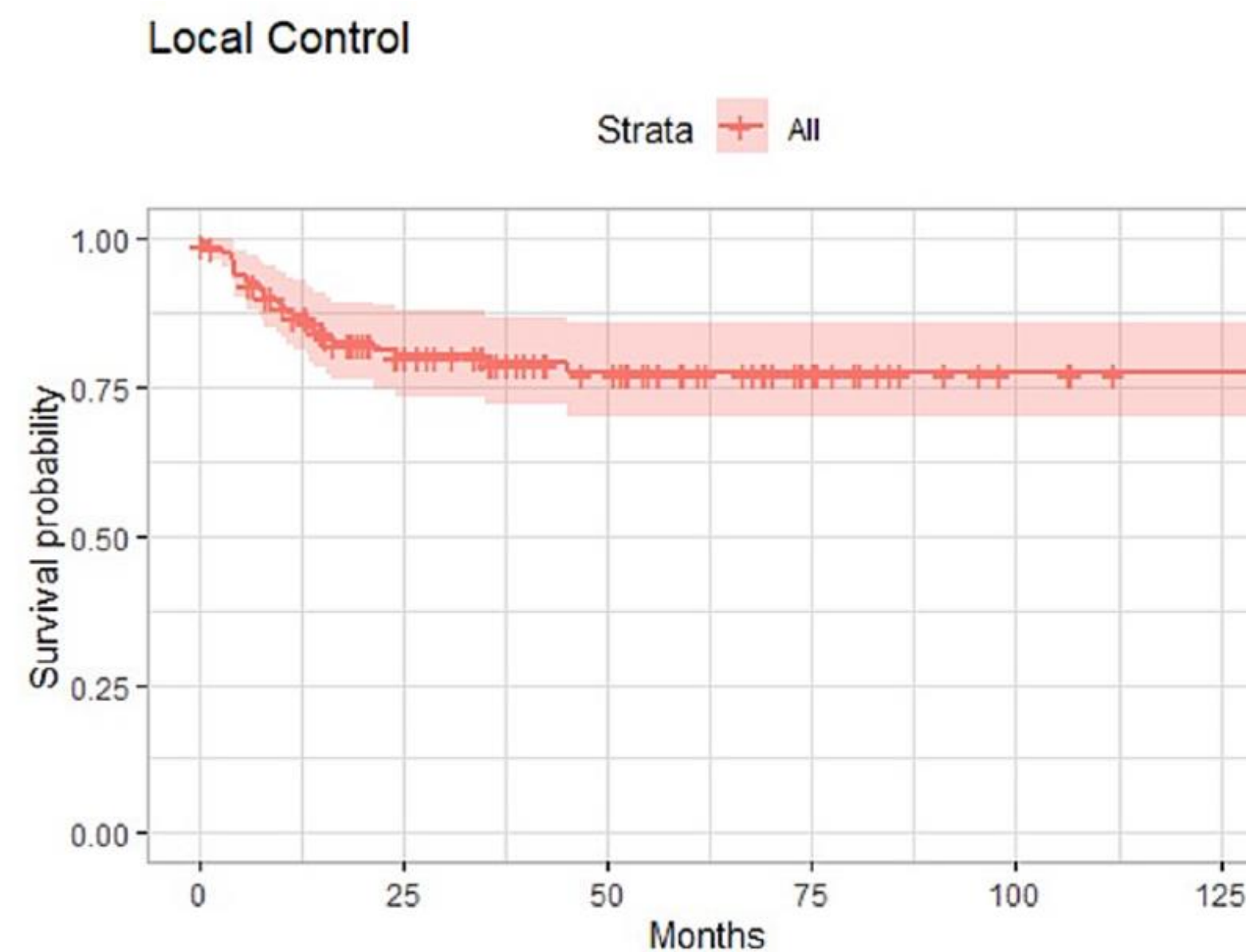
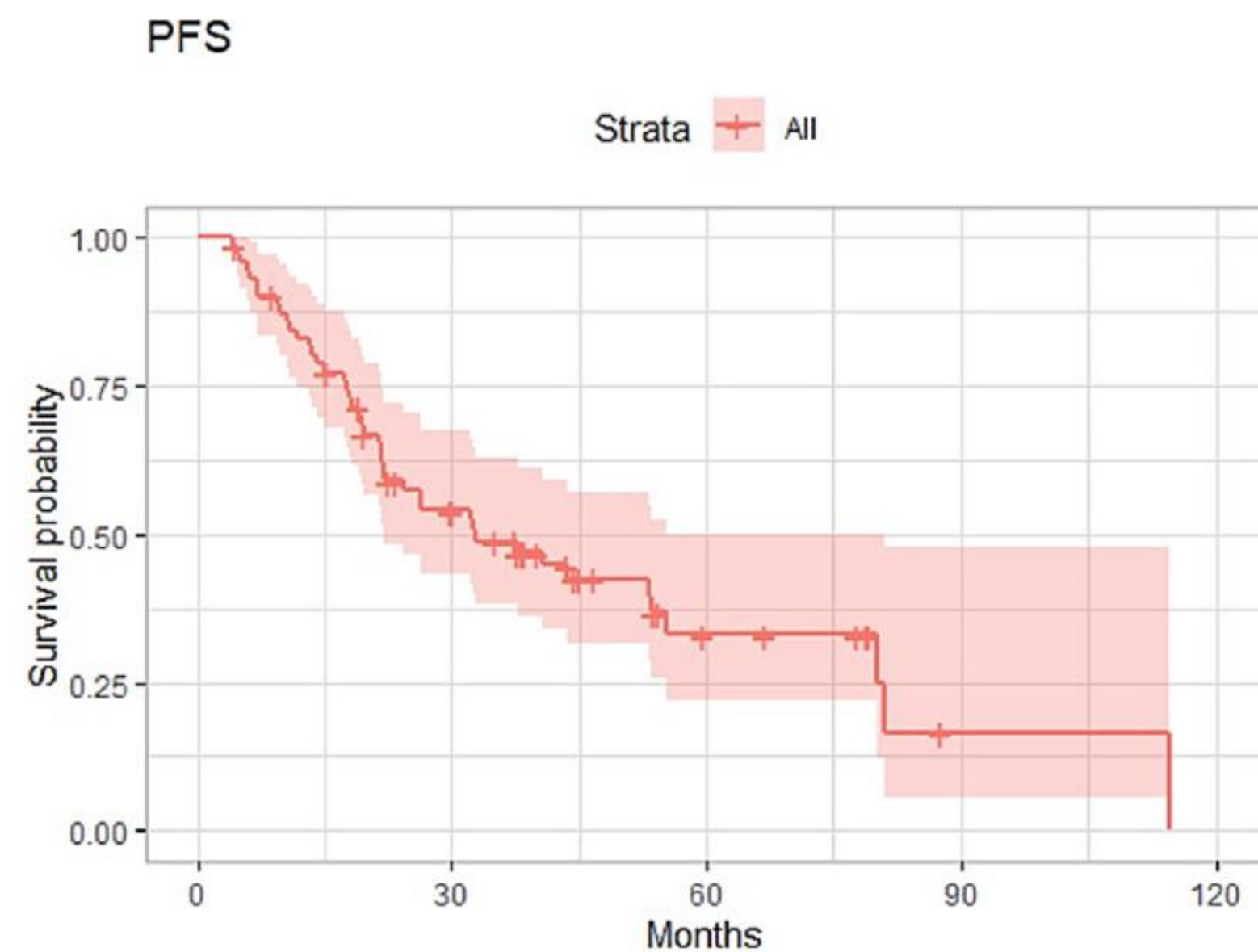
Primary Cutaneous Indolent Lymphomas (PCFCL, PCMZL)

Low-Dose Radiotherapy for Primary Cutaneous Indolent B-Cell Lymphomas: a Multicenter Retrospective Study

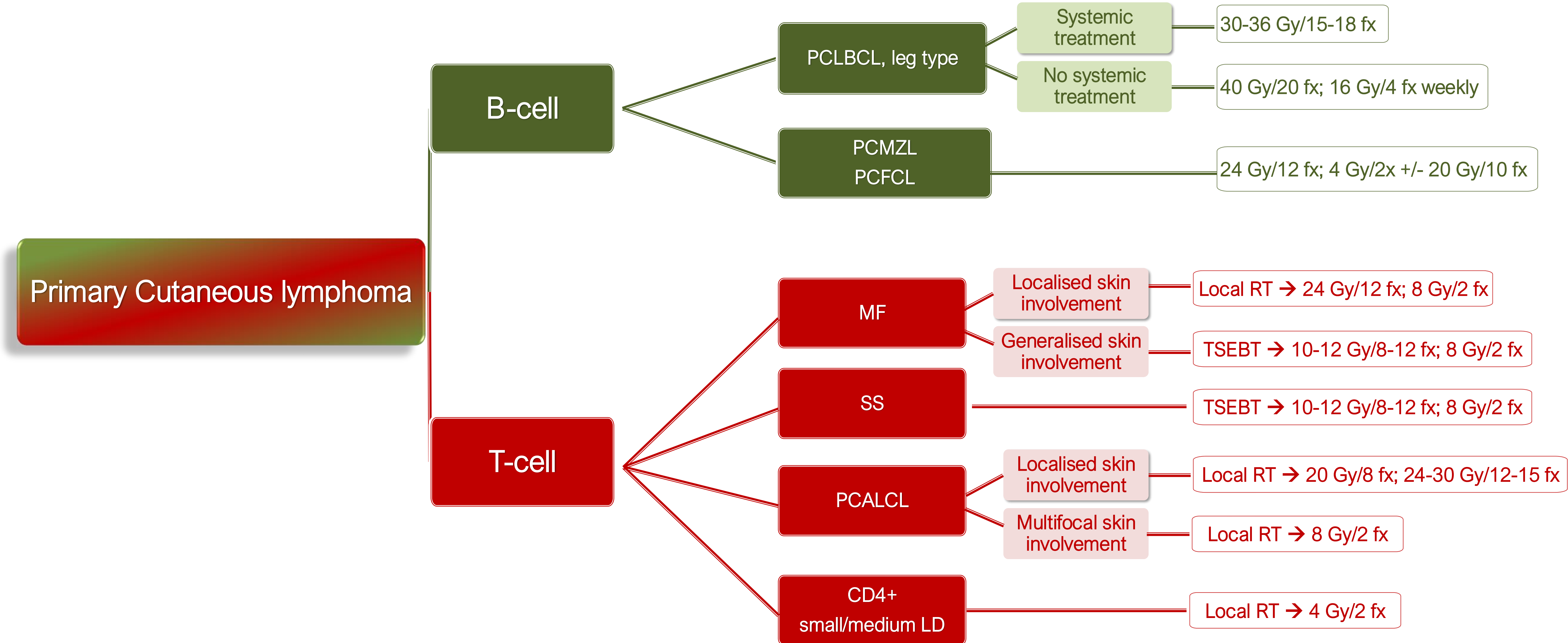
E Ali^a, G Simontacchi^b, M Levis^c , F Iori^a , S Gambarà^d, EM Cuffini^c, N Pimpinelli^e, V Grandi^f, A Botti^g, G Paolani^g , C Iotti^a , U Ricardi^c , P Ciammella^{a,*} 

Radiother Oncol 2026

	LC	PFS
12 months	87%	83%
24 months	80%	59%
36 months	79%	49%
48 months	77%	42%



- ✓ Larger lesions (>2.5 cm) and multifocal presentation associated with worse PFS and LC
- ✓ No G3 + toxicity events detected



RT in Primary Cutaneous Lymphoma – Take home messages

- **Radiotherapy plays a key role** in cutaneous lymphomas, from localized disease to extensive skin involvement
- **Electrons and photons** can be selected according to disease distribution, depth, and target geometry
- **Tomotherapy** may be particularly valuable for complex or extensive target volumes
- **Very low doses (4 Gy/2 fractions)** can provide excellent responses in indolent cutaneous lymphomas
- **Higher doses (up to 40 Gy)** may be required for more aggressive disease, PCLBCL-LT

RT in Primary Cutaneous Lymphoma – Take home messages

- **Treatment volumes range widely**, from small localized lesions to **TSEBT** for extensive cutaneous involvement
- **TSEBT** is a technically challenging treatment, requiring careful patient selection, treatment planning and dosimetry
- **TSEBT** can achieve excellent skin response rates and may contribute to durable disease control, particularly **in early-stage MF**
- **In advanced disease, TSEBT has an important palliative role**: beyond rapid and effective symptom control, it can achieve meaningful disease control and delay subsequent therapies, potentially prolonging **TTNT**
- **Toxicity** must be interpreted in context: patients receiving TSEBT are often heavily pretreated

From 4 Gy to TSEBT: dose and volume must be tailored to disease biology, histology and treatment intent

Erica Maria Cuffini

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della Scienza di Torino

DEPARTMENT OF
ONCOLOGY
UNIVERSITY OF TURIN



Grazie per l'attenzione!

