

# **CP6: Improved radiotherapy and medical treatment**

*Ditte Sloth Møller, Tine Schytte, Gitte Persson, Marianne Marquard Knap*

***DOLGs Radioterapigruppe***



Danish Comprehensive Cancer Center

# Strålebehandling af lungekræft

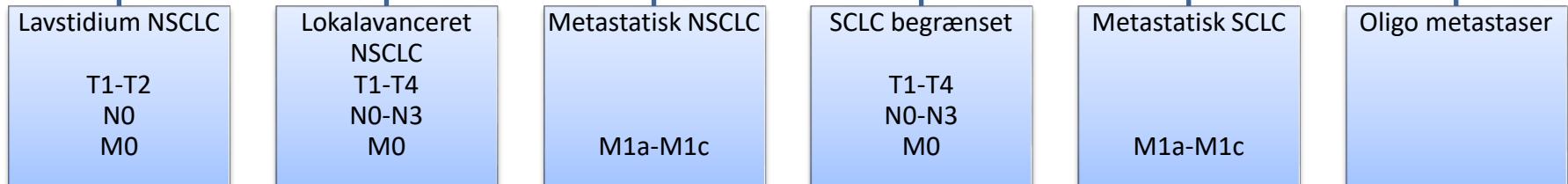
---

Lokalt avancerede 700

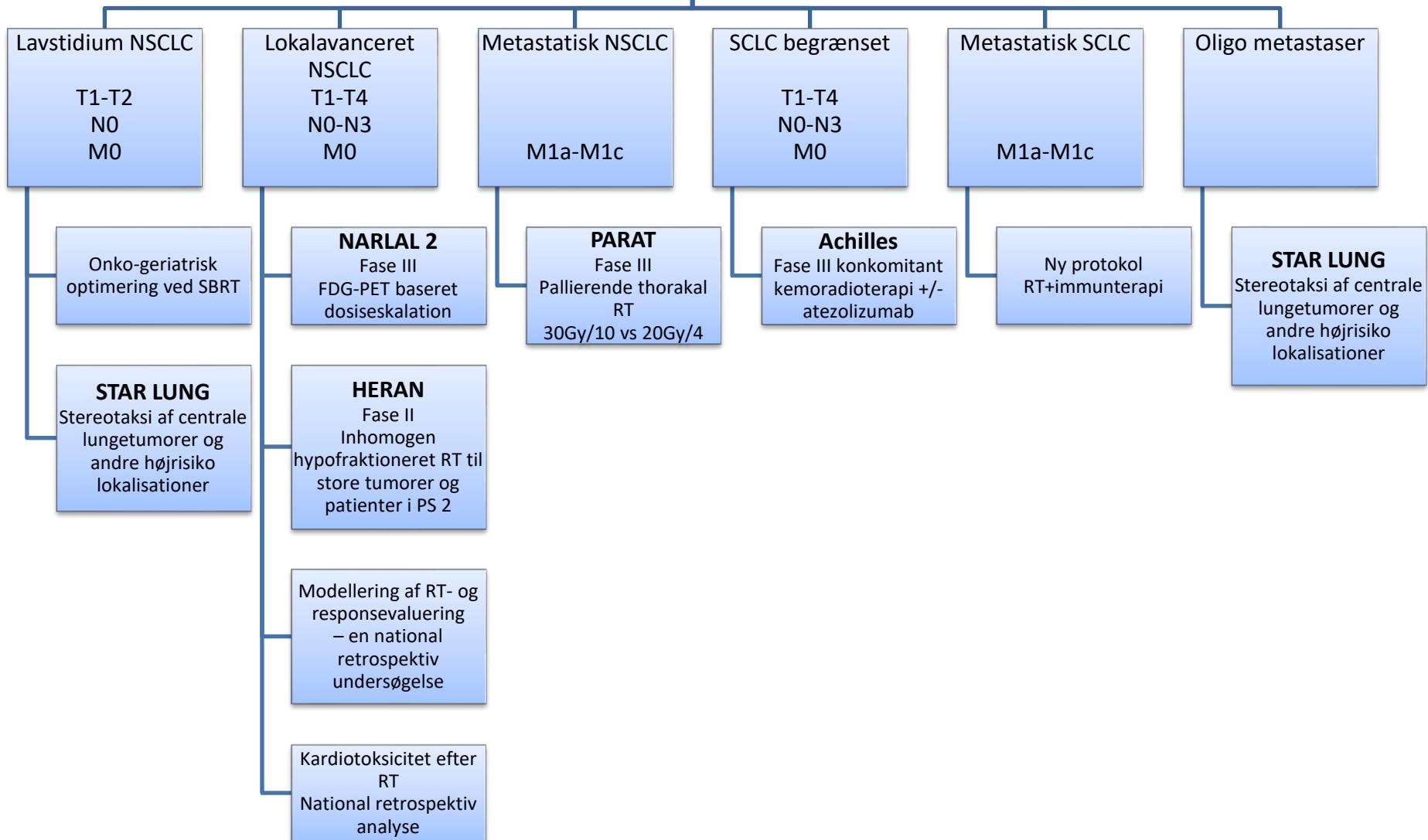
SBRT 700

Palliativ 1000

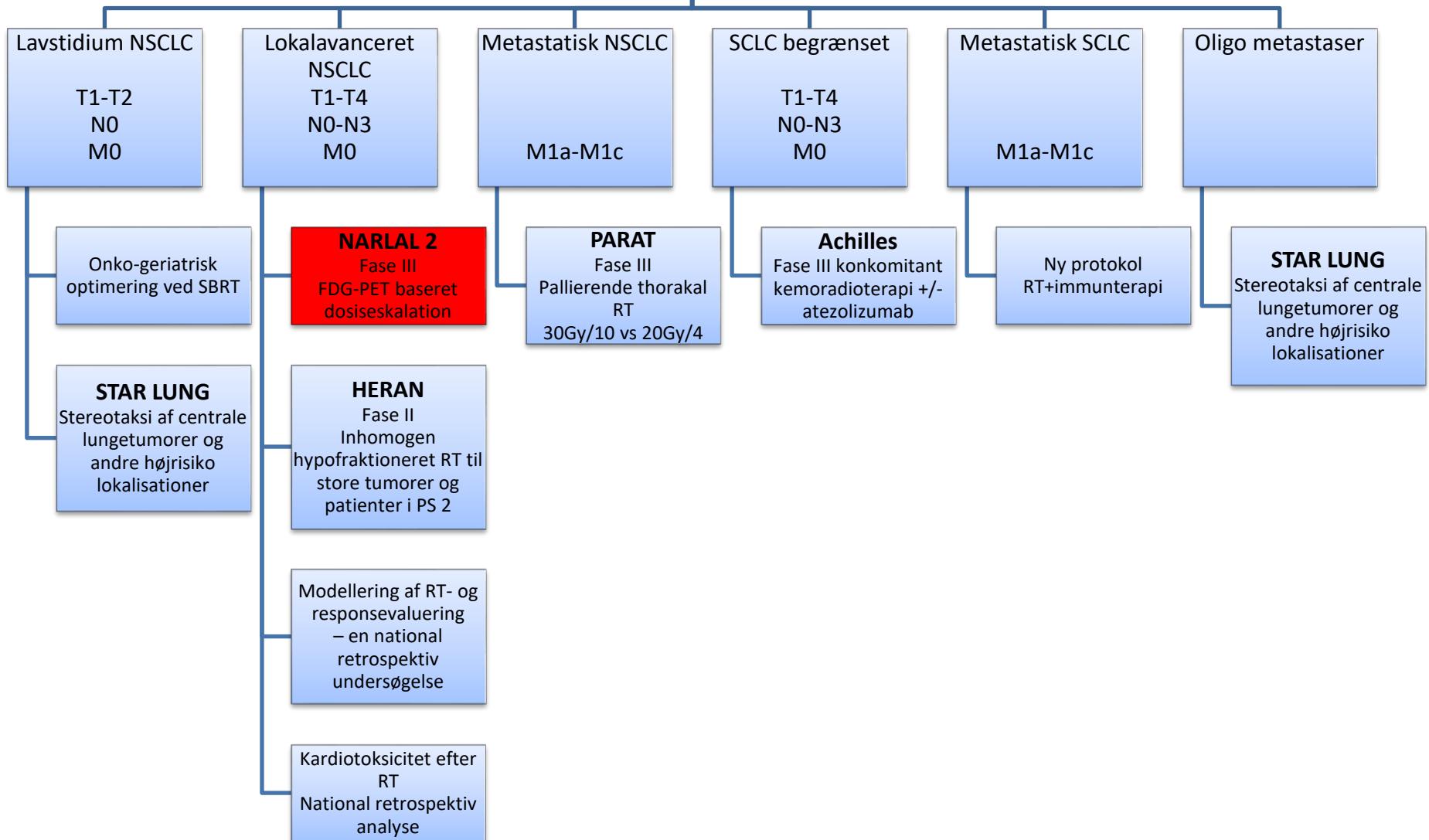
## DOLG-RT



# DOLG-RT

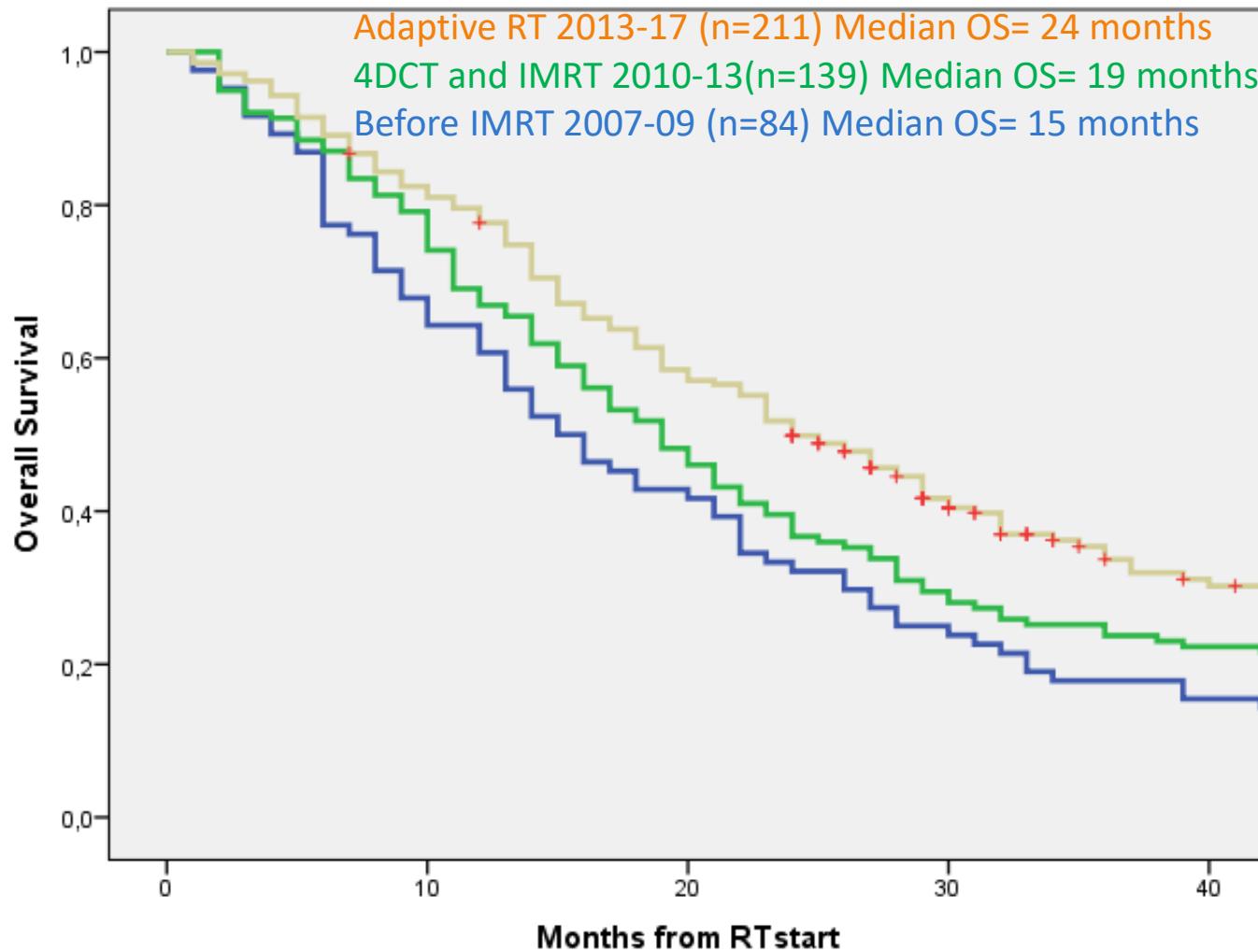


# DOLG-RT



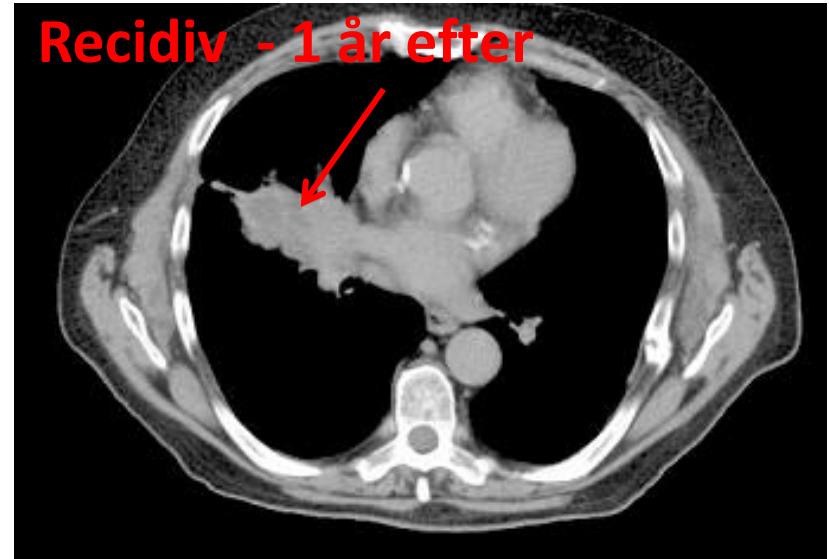
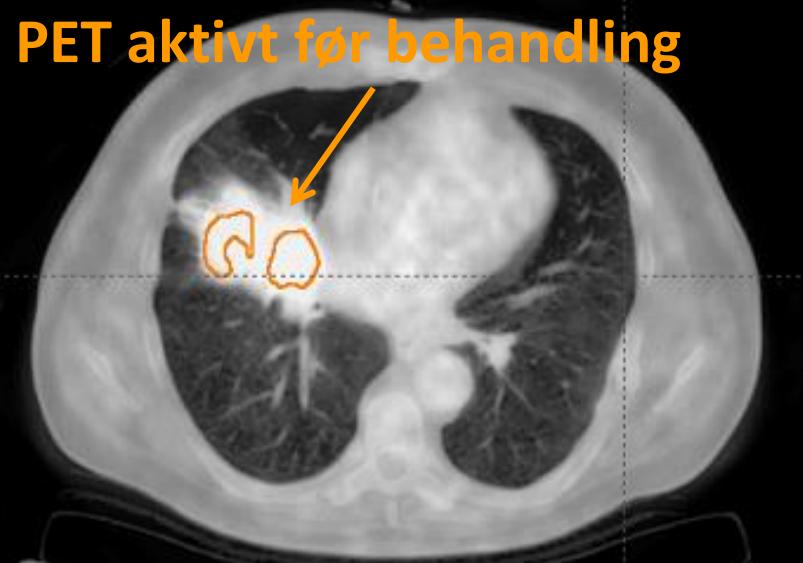
# Stadium III NSCLC

Overlevelse stadium III NSCLC patienter på AUH  
Behandlet i 3 tidsperioder



# NSCLC recidiv

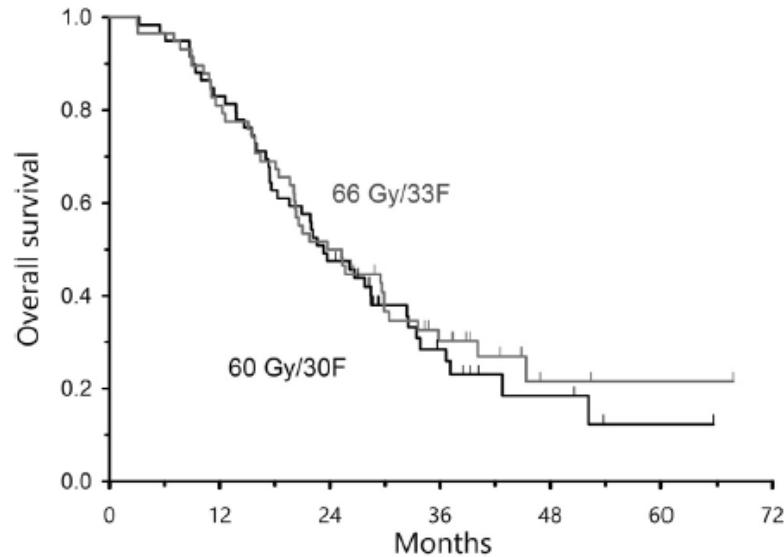
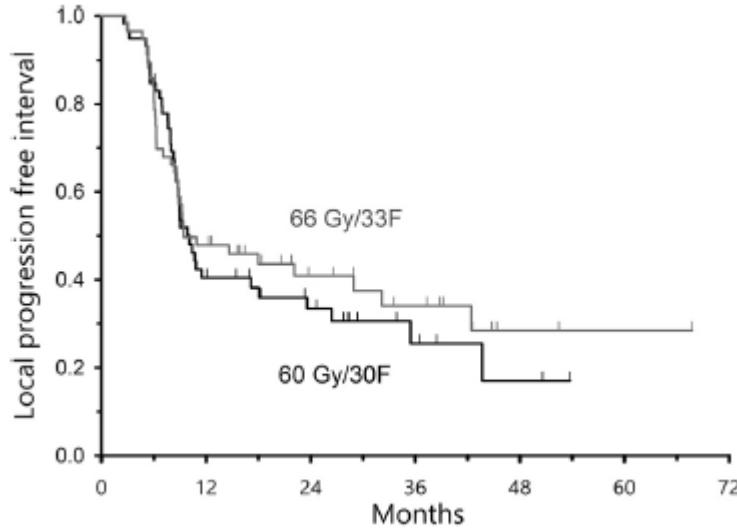
---



# NARLAL1

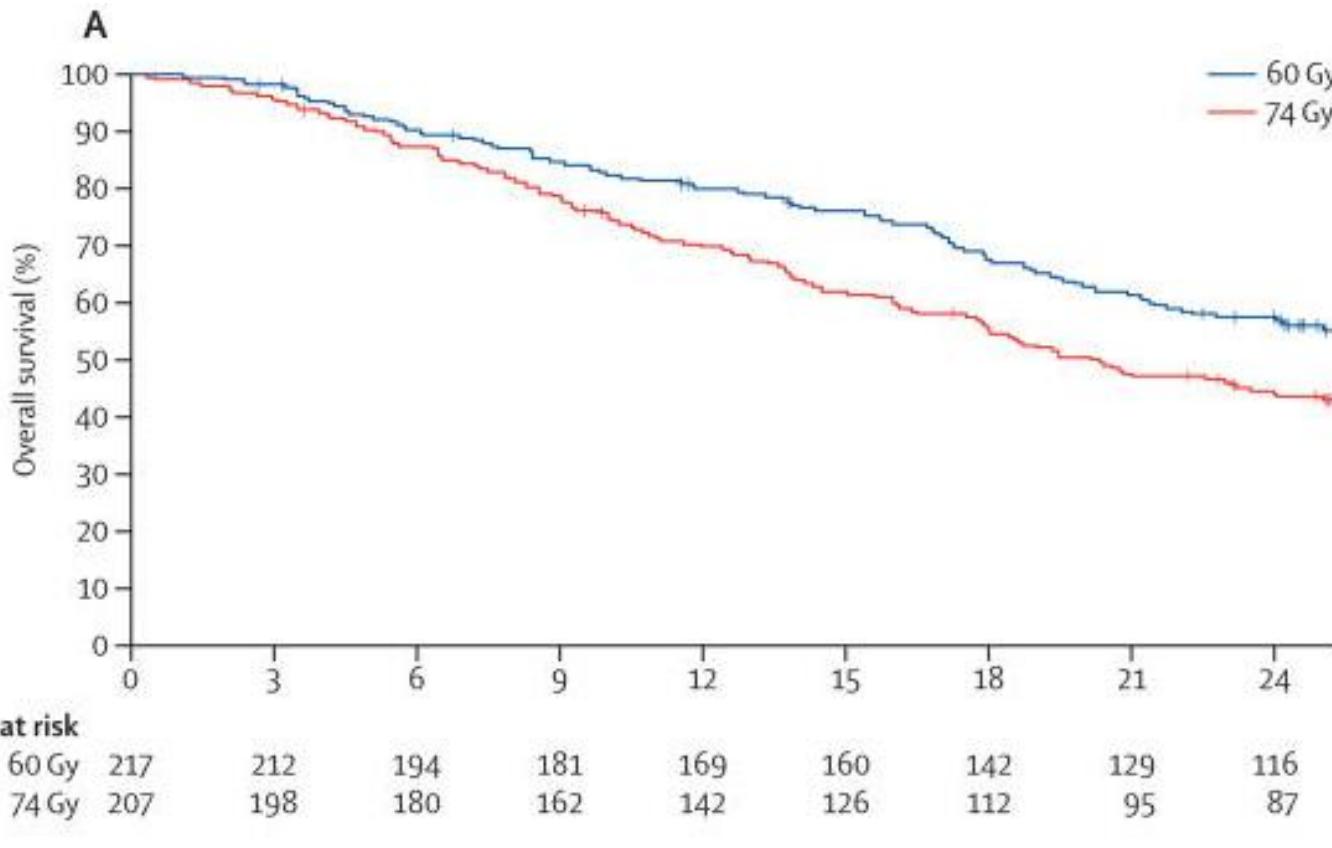
Randomiseret fase 2  
117 patienter  
60 Gy vs 66 Gy  
Oral Vinorelbine 3 gange / uge

66 Gy standard  
behandling i Danmark



# RTOG 0617

Randomiseret mellem **60 Gy** og **74 Gy** til hele target



# NARLAL2

---

Standard dosis mulig

Homogen standard dosis  
PTV: 66 Gy/33 fraktioner(F)

Heterogen, FDG-guided dosiseskalation  
PET GTV-T  $\leq$  95 Gy/33 F (middel)  
PET GTV-N  $\leq$  74 Gy/33 F (middel)  
PTV: 66 Gy/33 F (min)

# NARLAL2

---

Primær tumor: 50% af SUV peak FDG-PET

Eskalation op til: middel dosis 95 Gy /33 F



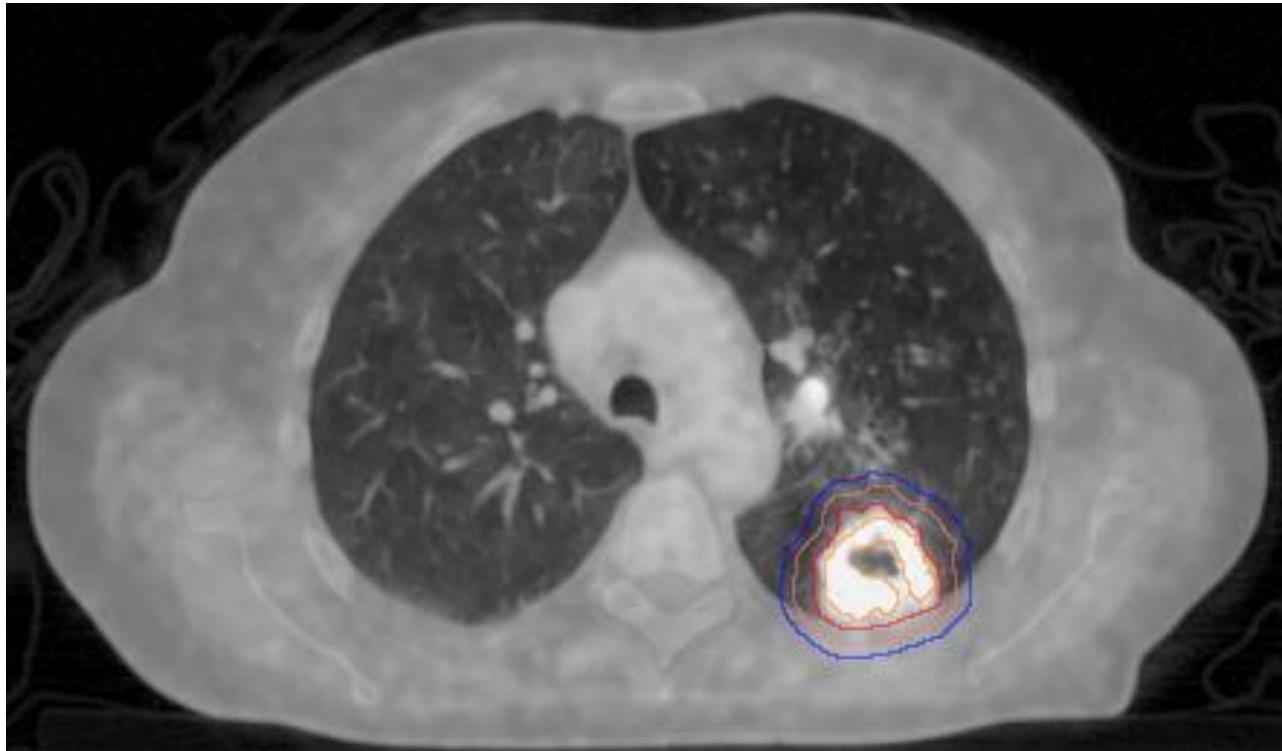
# NARLAL2

---

Primær tumor: 50% af SUV peak FDG-PET

Eskalation op til: middel dosis 95 Gy /33 F

Minimum dosis til PTV 66 Gy/33 F



# NARLAL2

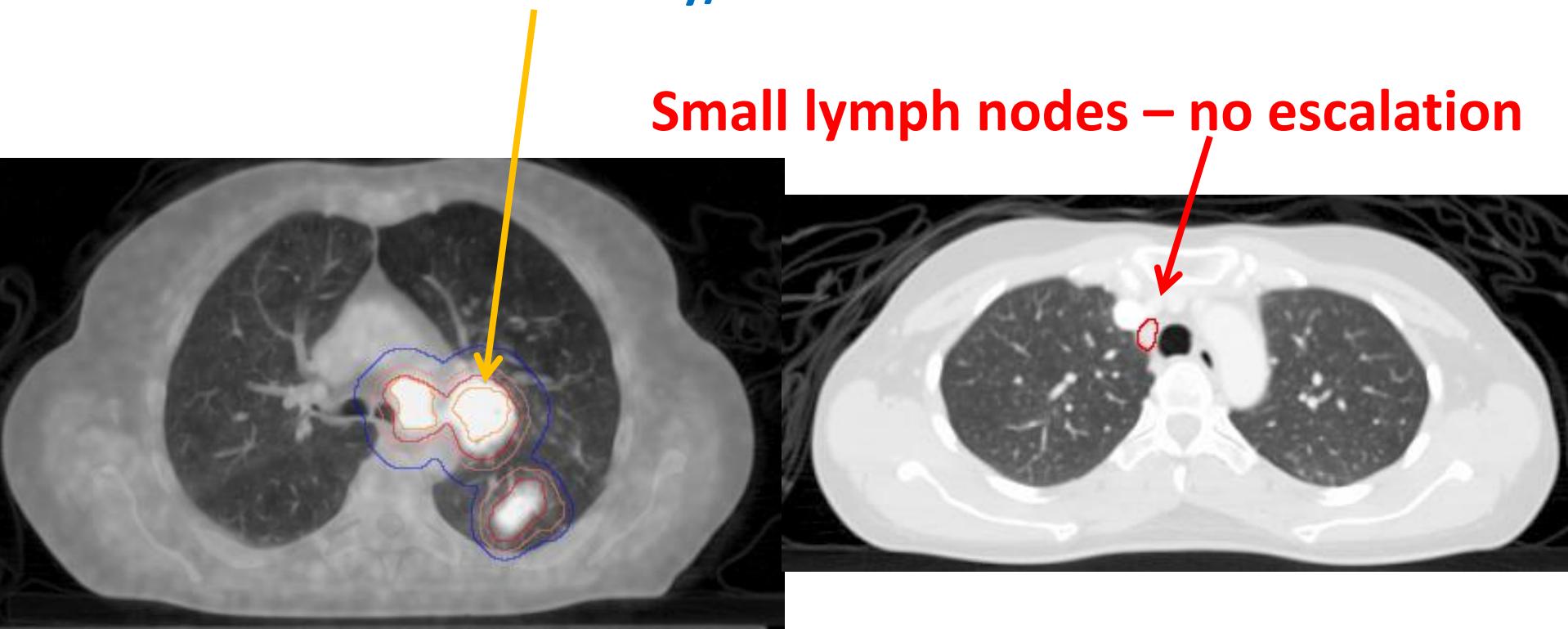
---

Lymfeknuder større end  $4 \text{ cm}^3$ : 50% of SUV peak

Eskalation op til: middel dosis 74 Gy /33 F

Minimum dose to PTV 66 Gy/33 F

Small lymph nodes – no escalation



# NARLAL2

Stadium IIb – IIIb PS 0-1

Standard dosis mulig

Homogen standard dosis  
PTV: 66 Gy/33 fraktioner(F)

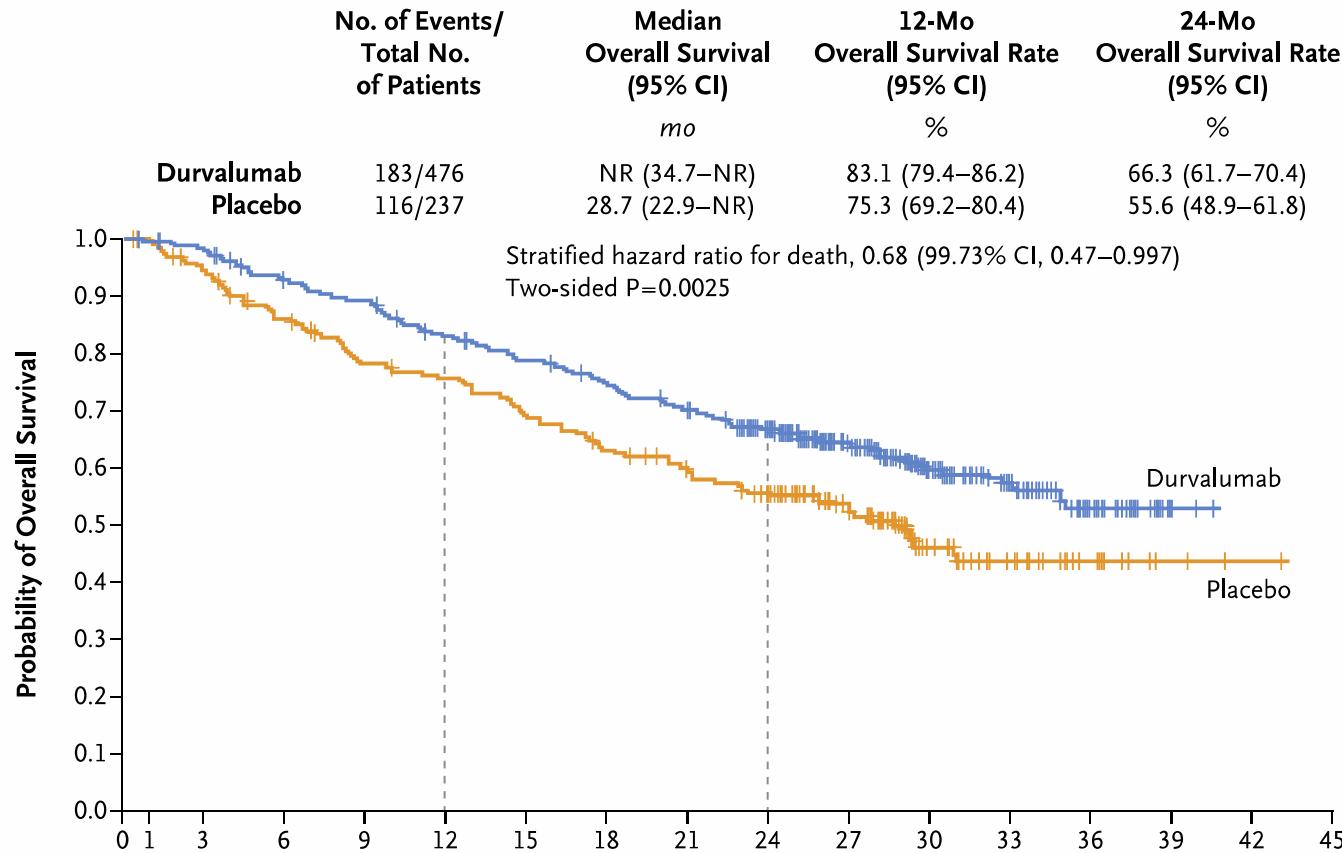
Heterogen, FDG-guided dosiseskalation  
PET GTV-T  $\leq$  95 Gy/33 F (middel)  
PET GTV-N  $\leq$  74 Gy/33 F (middel)  
PTV: 66 Gy/33 F (min)

**Ens lunge dosis: MLD  $\pm$  1 Gy and  $V_{20Gy} \pm 2\%$ .**

**Forskellig tumor dosisfordeling**

Primært endepunkt: Lokoregional kontrol

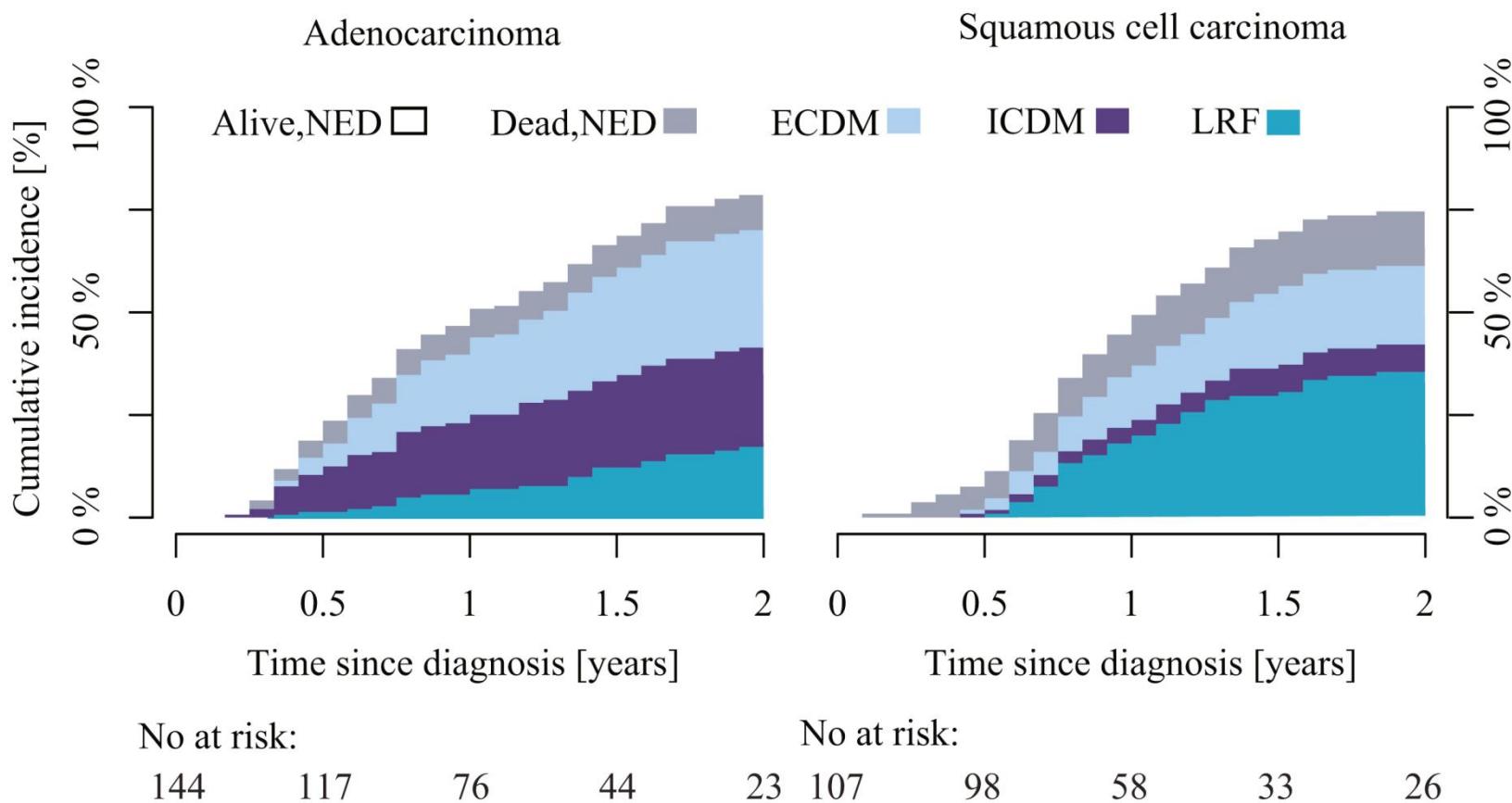
# Durvalumab og NARLAL2



## No. at Risk

Durvalumab	476	464	431	415	385	364	343	319	274	210	115	57	23	2	0	0
Placebo	237	220	198	178	170	155	141	130	117	78	42	21	9	3	1	0

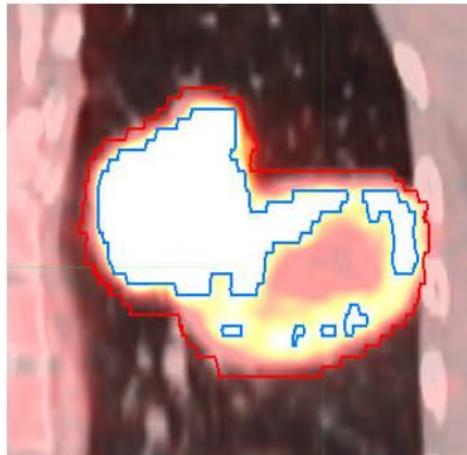
# Individualiseret RT



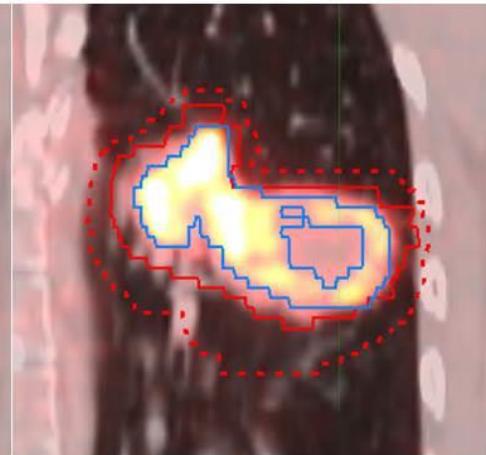
# Individualiseret RT

---

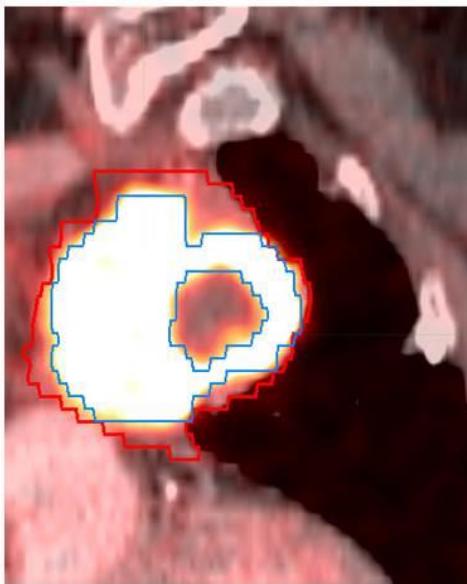
Patient a) PET/CT before RT



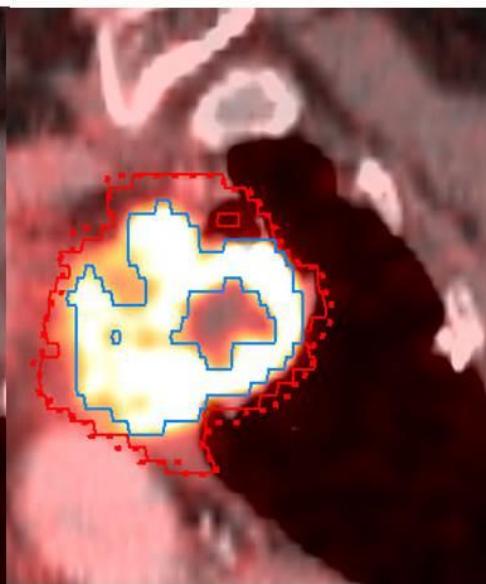
PET/CT day 14 during RT



Patient b) PET/CT before RT



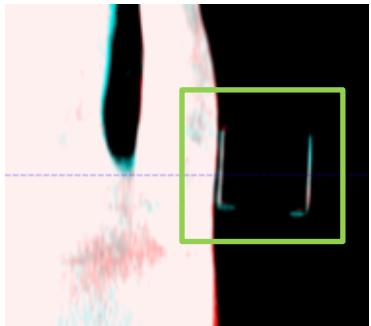
PET/CT day 14 during RT



# Teknologiske forbedringer

---

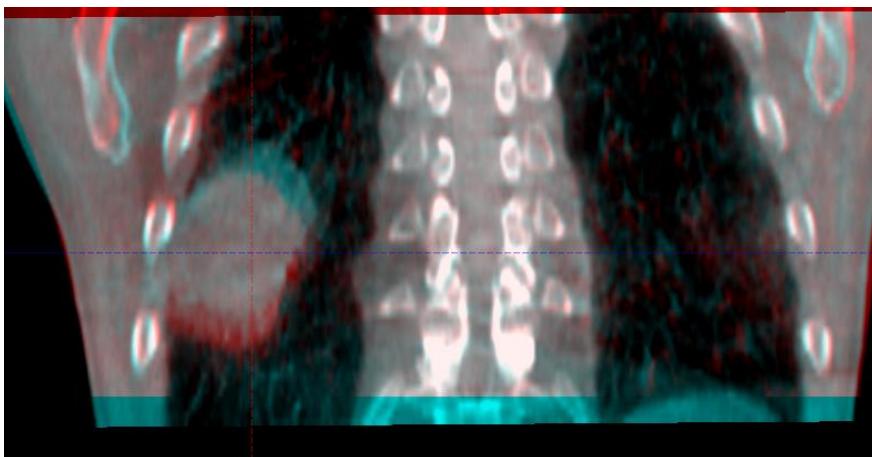
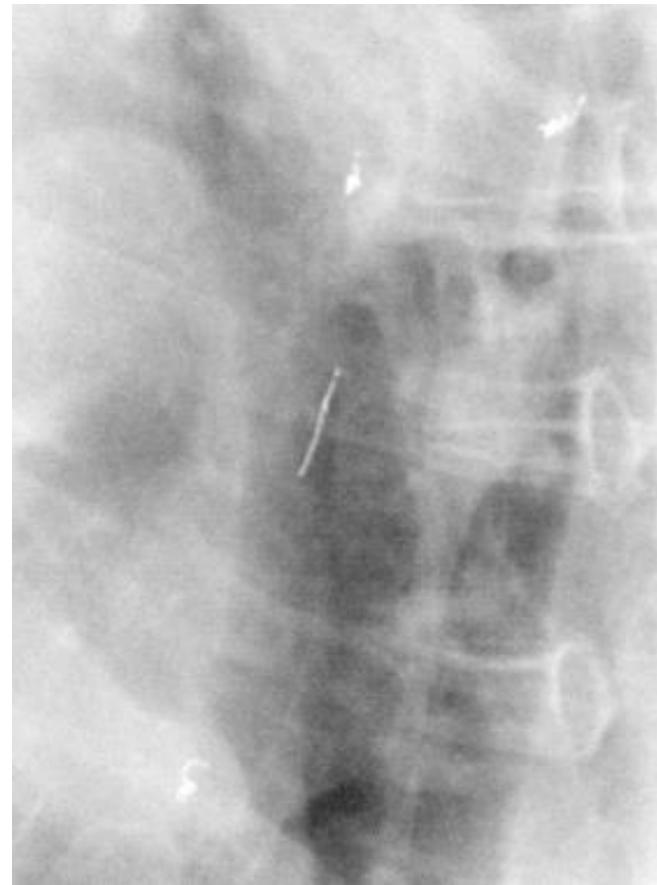
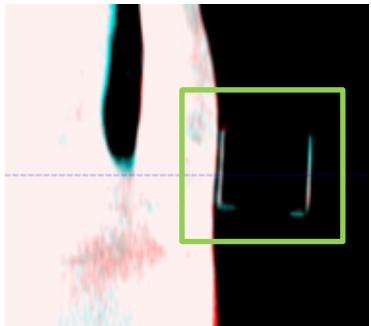
- Tumor tracking, behandling i DIBH



# Teknologiske forbedringer

---

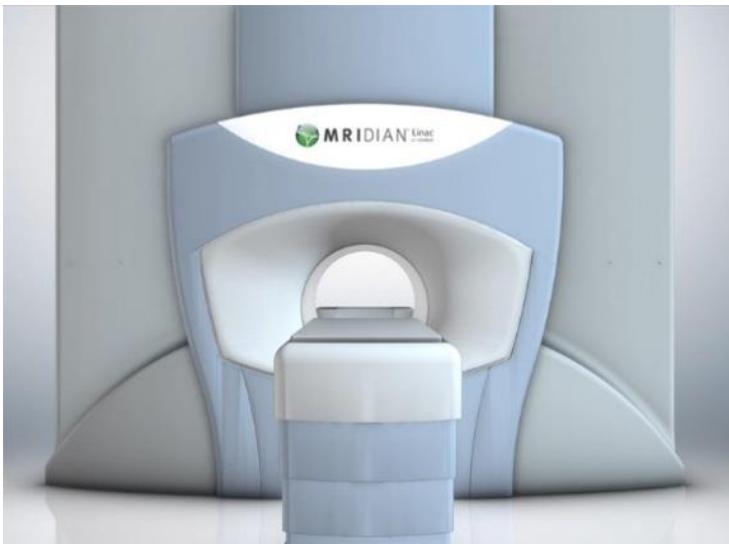
- Tumor tracking, behandling i DIBH



# Teknologiske forbedringer – MR LINAC

---

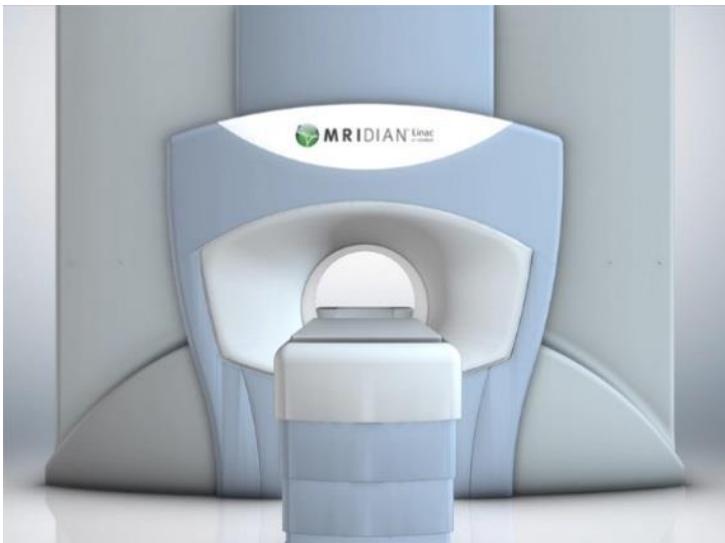
- Tumor tracking med MR, behandling i DIBH



Rigshospitalet

# Teknologiske forbedringer – MR LINAC

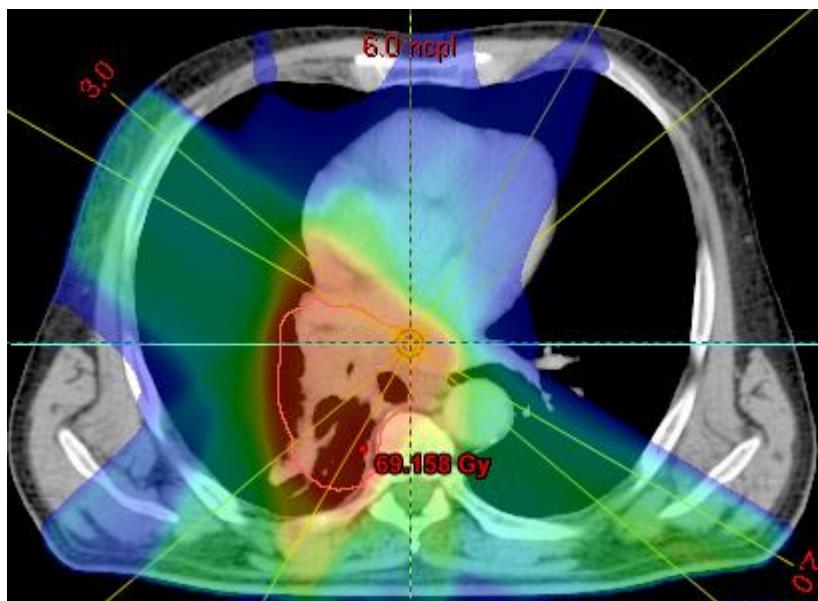
- Tumor tracking med MR, behandling i DIBH



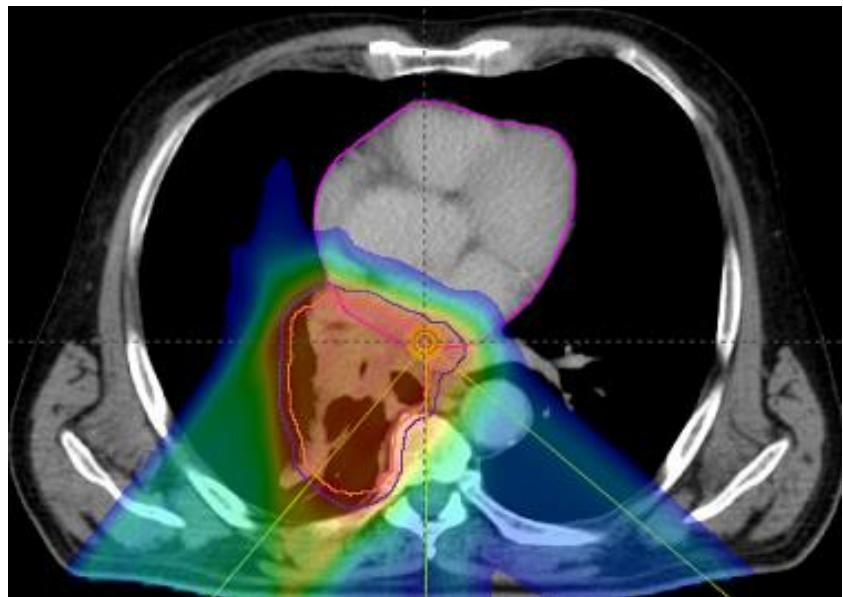
Rigshospitalet

# Teknologiske forbedringer - protonterapi

Photons: 7F IMRT



Protons: 3F IMPT



	Photon	Proton
Mean lung dose	12.3 Gy	7.2 Gy
Mean heart dose	10.1 Gy	2.1 Gy

# DOLG-RT

