PTCOG-AO 2025
HONG KONG
NOV 7-9
PTCOG-AO

Theme: Clinical

Abstract No:0033

Abstract Title: Long-term clinical outcomes after proton beam therapy for operable early-stage lung cancer

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Background / Aims:

To evaluate the clinical outcomes of proton beam therapy (PBT) for operable early-stage lung cancer by analyzing data from the prospective registry database of the Japanese Society for Radiation Oncology Particle Therapy Committee.

Subjects and Methods:

Patients

- Stage 0–IIA lung cancer
- Eligible for lobectomy or pneumonectomy
- Treated with PBT between May 2016 and Jun 2018

Endpoints

- Overall survival (OS)
- Progression-free survival (PFS)
- Local recurrence (LR)
- G3-5 adverse events (AE)

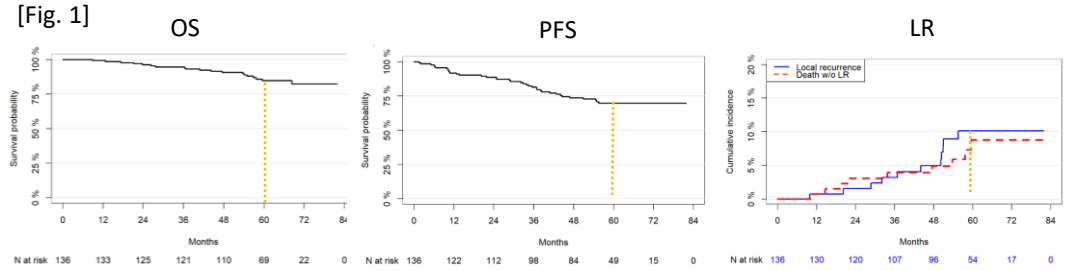
Result:

- N = **137** patients (Table 1)
- Median follow-up duration: **60.1** months
- 5-yr OS / PFS / LR rates: **84.7% / 69.7% / 9%** (Fig. 1)
- Grade 3-5 AE: **2 (1.5%)** G3 radiation pneumonitis

[Table 1]

Pts' characteristics and sub-group	N=137	OS (%)	PFS (%)
Age, Median (range)	71 (38-87)	89.6 (<75) / 70.8 (≥75)	69.5 (<75) / 69.0 (≥75)
Sex, Male / Female	79 / 58	83.9 / 85.8	69.0 / 70.7
PS, 0 / 1	111 / 26	88.4 / 70.1	73.0 / 53.8
Diagnosis, clinical / pathological	55 / 79	83.4 / 85.7	75.6 / 66.3
UICC8th, 0 / IA1 / IA2 / IA3 / IB / IIA	2 / 24 / 36 / 44 / 20 / 10	100 / 100 / 93.4 / 86.6 / 67.5 / 40.5	100 / 86.4 / 81.1 / 56.9 / 55.4 / 58.3
Location, Peripheral / Central	116 / 21	86.6 / 73.7	73.0 / 50.6
ILD, Absent / present	130 / 7	85.5 / 66.7	71.8 / NA

[Fig. 1]



Conclusions:

PBT for operable early-stage lung cancer showed promising clinical outcomes. Further investigation is needed to improve OS and PFS, especially in patients with stage IA3, IB, and IIA disease.