Baseline skeletal muscle index as an independent prognostic factor in locally advanced head and neck quamous cell carcinoma: A post hoc analysic of the REACH trial

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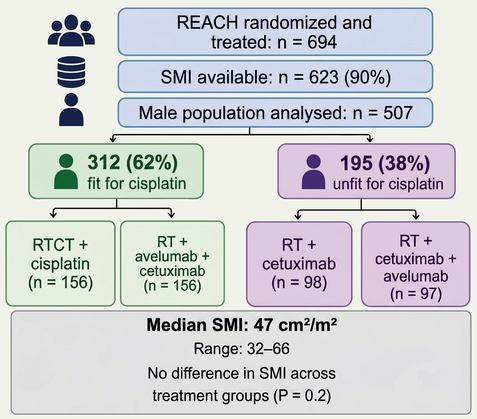
Muscle matters: baseline skeletal muscle index is an independent prognostic biomarker in LAHNSCC
Post hoc PROSAC analysis of the REACH trial (male population, N = 507)

1 THE STUDY

- REACH trial (2017-2020), randomized phase III trial
- Baseline CT at C3
- SMI analyzed as a continuous variable
- Cox models for DFS and OS
- Internal validation by bootstrap

2 THE PATIENTS



3 HIGHER SMI = LOWER RISK OF PROGRESSION & DEATH

DFS

Multivariable analysis

0.88

HR per + 5 SMI units

95% CI 0.80-0.97
***p* = 0.013**

Univariable: HR 0.81
95% CI 0.70-0.90, $p < 0.0001$

OS

Multivariable analysis

0.86

HR per + 5 SMI units

95% CI 0.76-0.97
***p* = 0.015**

Univariable: HR 0.81
95% CI 0.70-0.90, $p < 0.0001$

Adjusted for age, ECOG, stage, p16 status, treatment arm and fit/unfit status

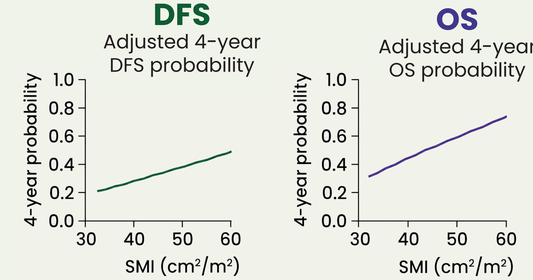
4 CONSISTENT EFFECT

No significant interaction with fit / unfit cohort
- DFS: $p = 0.15$
- OS: $p = 0.22$

No significant interaction with treatment arm
- DFS: $p = 0.8$
- OS: $p = 0.96$

The prognostic impact of SMI was consistent across cohorts and treatment arms.

5 LINEAR RELATIONSHIP



Association between SMI and outcomes is linear. These findings arone against the use of arbitrary sarcopenia thresholds

6 CONCLUSION

- **Baseline SMI measured at C3 is an independent prognostic factor for DFS and OS in men with LAHNSCC treated in the REACH trial.**
- **Higher SMI is associated with better outcomes.**
- **The effect is linear and consistent across fit/unfit cohorts and treatment arms.**
- **SMI should be considered a continuous prognostic biomarker rather than dichotomized using arbitrary thresholds.**

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SMI: skeletal muscle index DFS/PFS: disease/progression-free survival OS: overall survival LAHNSCC: locally advanced head and neck squamous cell carcinoma