

Nutritional supplements

- L-carnitine
 - Pancreatic cancer: ↑ BMI (cell mass, fat) (Kraft 12)
- Vitamin D
 - Multiple geriatric studies: ↑ muscle strength
 - Prostate cancer: ↑ muscle strength (Van Veldhuizen 00)
- Fatty acids
 - Eicosapentenoic acid: 5 studies, effectiveness?

Nutritional supplements

- Thalidomide combined with MA and supplements
 - Randomized study: combo better than MA, eicosapentenoic acid, L-carnitine, thalidomide alone
 - Lean body mass, resting energy exp., active energy exp., fatigue, IL-6, appetite, Glasgow prognostic score all improved.

Mantovani G, Eur Rev Pharmacol Sci, 2010


EPO

- Darbopoietin
 - 221 CRC patients, peri-op treatment
 - ↑ post-op work capacity and Hb
 - No effect on fatigue, postural sway, QOL, and muscle strength

Norager et al., Oncology 2006

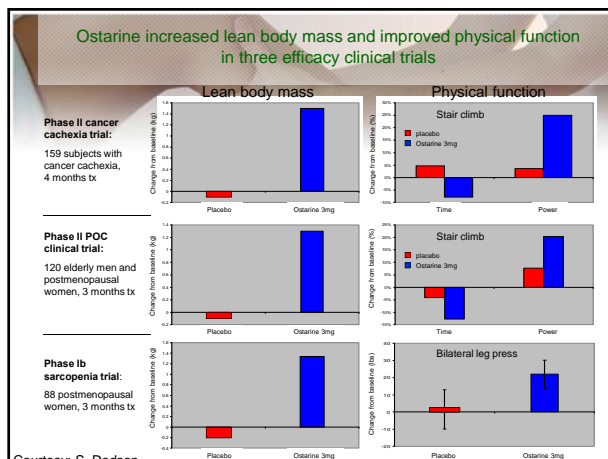
Anabolic steroids


- Testosterone
- Nandrolone
- Oxandrolone
- Proven, but very little cancer literature



Selective androgen receptors modulators

- Enobosarm (a.k.a. ostarine)
 - In phase III trials in NSCLC
- LGD-4033
 - Early study shows increase in lean body mass in young men without PSA changes (Basaria 2012)
- Several molecules in preclinical development





Conclusions

- Several agents have at least a marginal effect on LBM
- Most studies are small
- A consistent effect on strength remains to be confirmed in cancer patients.
- Given the limits of physical exercise in the elderly, pharmacologic interventions are a great opportunity

