Which patient with biochemical recurrence after primary treatment for prostate cancer would result in a positive 68Ga-PSMA PET/CT? A clinical tool to guide physicians before suggesting 68Ga-PSMA PET/CT

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Introduction and objective

To develop a **clinical nomogram** aimed to predict which **patients with recurrent prostate cancer** (PCa) **could benefit** from ⁶⁸Gallium-Prostate Specific Membrane Antigen Positron Emission Tomography/Computed Tomography (⁶⁸Ga-PSMA PET/CT).

Material and Methods

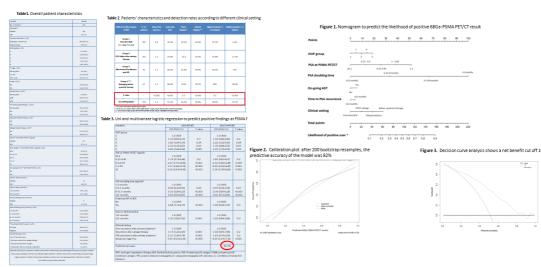
703 PCa patients with confirmed **biochemical recurrence** (BCR)

- after Radical Prostatectomy (n=684)
- After primary radiotherapy (n=19)

Each man underwent ⁶⁸Ga-PSMA PET/CT to identify the site of recurrence.

- 1) We assessed the detection rate of ⁶⁸Ga-PSMA PET/CT in overall population and in each subgroup of patients (first PSA relapse, BCR after salvage therapy, PSA persistence after primary therapy and disease progression before starting systemic therapies).
- 2) **Multivariate logistic regressions** were used to determine which co-variates independently **predict a positive** ⁶⁸Ga-PSMA PET/CT result.
- 3) Regression-based coefficients were used to develop a nomogram predicting positive ⁶⁸Ga-PSMA PET/CT result and 200 bootstrap resamples were used for internal validation.

Results



Conclusions

Our nomogram could help physician to select patients with different scenario of recurrence who may benefit from ⁶⁸Ga-PSMA PET/CT restaging.