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The German risk-adapted PCA Screening Trial (PROBASE) – first results

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Background and Objective

PSA screening is controversially discussed due to a still high number of men needed to be screened (NNS) and treated (NNT) to achieve the reported decrease in prostate cancer (PCA) mortality. A risk-adapted approach using a baseline PSA value at age 45 may improve the NNT. The German risk-adapted PCA Screening Trial PROBASE is currently the largest ongoing screening trial and aims to accrue 50,000 men within 5 yrs in a prospective and randomized fashion. The trial started accrual in April 2014 and was analyzed for risk groups and incidence of PCA in 45 yrs old men.

Patients and Methods

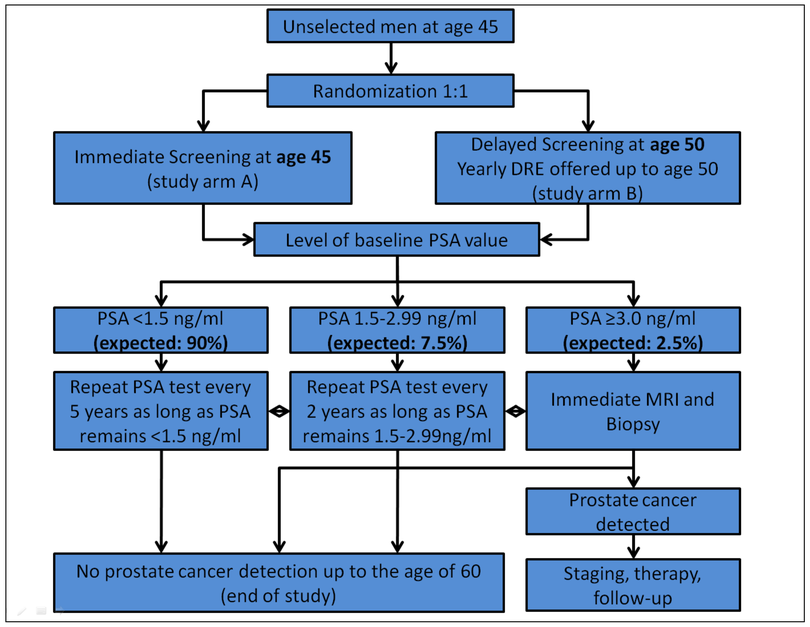

Fig. 1: General flow chart of the PROBASE-trial

Study endpoints

- Primary endpoint (composite endpoint): superiority in terms of the specificity of risk-adapted PSA screening starting at age 50 (arm B) as compared to 45 yrs (arm A) with non-inferiority in terms of metastasis from PCA up to end of screening at age 60 (non-inferiority of arm B with respect to sensitivity)
-Secondary endpoints: PCA mortality rate, overall survival, locally advanced PCA, high grade PCA

Participation rate

Until January 31st (10 months) 47,234 45yrs-old men were approached of which 6,178 complied with the invitation (13.1%). 3,102 subjects were randomized into study arm A and 3,076 subjects were randomized into study arm B.

Results of study arm A

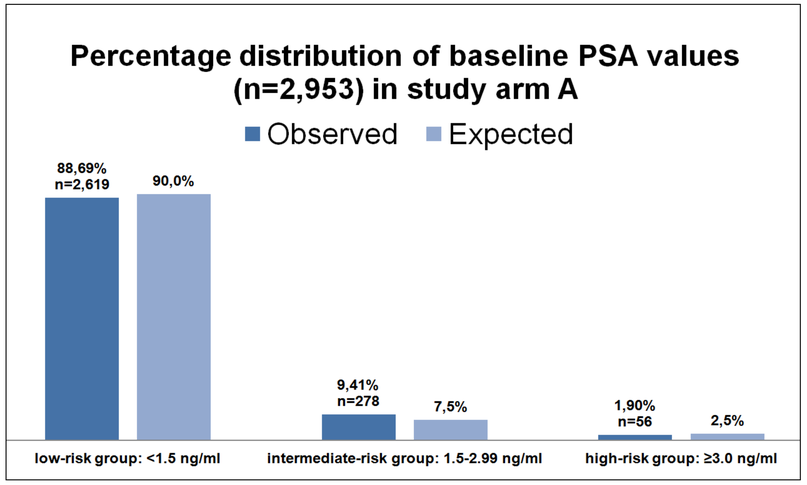

Fig. 2: Overview of the percentage distribution of baseline PSA values in study arm A

High-risk group of study arm A (n=56; 1.90%)	
Rate of confirmatory PSA value ≥3.0 ng/ml	48.2% (27/56)
Serum PSA (ng/ml) (confirmatory values)	
Median (range)	4.28 (3.01-17.5)
Multiparametric MRI	
Performed	55.5% (15/27)
Refused	25.9% (7/27)
Pending	14.8% (4/27)
Not feasible	3.7% (1/27)
Overall PI-RADS score	
PI-RADS 1	6.7% (1/15)
PI-RADS 2	66.7% (10/15)
PI-RADS 3	13.3% (2/15)
PI-RADS 4	6.7% (1/15)
PI-RADS 5	6.7% (1/15)

Tab. 1: PSA values and multiparametric MRI findings of subjects with confirmatory baseline PSA value ≥3.0 ng/ml (high-risk group of study arm A)

Prostate biopsy (MRI/US fusion-guided + systematic TRUS biopsy)	
Performed	40.7% (11/27)
Refused	40.7% (11/27)
Pending	18.5% (5/27)
PCA detection rate and Gleason grading	
PCA detection rate	36.4% (4/11)
Gleason score 3+3=6	75.0% (3/4)
Gleason score 4+5=9	25% (1/4)

Tab. 2: Biopsy results of subjects with confirmatory baseline PSA value ≥3.0 ng/ml (n=27) in study arm A

Results of study Arm B

Digital rectal examination (DRE)	
DRE performed	34.9% (1,075/3,076)
DRE results available	96.6% (1,038/1,075)
DRE not suspicious	98.8% (1,026/1,038)
DRE suspicious	1.2% (12/1,038)
Serum PSA (ng/ml) of subjects with suspicious DRE	
Median (range)	0.84 (0.33-1.85)
Prostate biopsy (systematic TRUS-biopsy)	
Performed	50.0% (6/12)
Refused	41.7% (5/12)
Pending	8.3% (1/12)
PCA detection rate	
PCA detection rate	0% (0/6)

Tab. 3: DRE findings and biopsy results of subjects in study arm B

Conclusions

- PROBASE started with a rapid recruitment and the expected distribution of risk-groups could be confirmed
- The expected and observed incidence of prostate cancer in 45 yrs-old men based on suspicious PSA values is < 1%
- More than 50% of subjects with an initial suspicious PSA value have confirmatory PSA values <3.0 ng/ml
- The positivity rate of a DRE in 45 yrs-old men is very low
- A substantial proportion of subjects refused prostate biopsy in spite of high confirmatory PSA values (study arm A) or suspicious DRE (study arm B)

Deutsche Krebshilfe
HELFEN. FORSCHEN. INFORMIEREN.

PROBASE
Die Deutsche Prostatakrebs Screening Studie

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