

## **MODELING THE PUBLIC HEALTH IMPACT OF RISK REDUCTION OF PROSTATE CANCER (PCA) WITH DUTASTERIDE CHEMOPREVENTION (CP) IN FRANCE**

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**Objective:** The REDUCE study showed that risk of PCa was decreased by dutasteride intake within increased-risk population. This work evaluated public health impact of potential CP strategies.

**Methods:** A Markov model was developed to compare CP vs no-CP through systematic mass screening. Among men between 50-69 years, it includes the following screening strategy: PSA<1ng/mL (4-year dosage surveillance), 1<PSA<3ng/mL (annual dosage) and PSA>3ng/mL (biopsy exam). In CP arm, dutasteride is provided to patients for whom biopsy is negative. Both screening and CP are stopped after 69 years old. Model inputs were derived from clinical and observational studies. Public health impact was expressed in term of PCa and PCa-related deaths avoided. An alternative strategy giving CP only to men with PCa-family-history was also tested.

**Results:** Overall population of men between 50-69 years old attains 6,615,129 in France (mean age: 58.2years and mean follow-up: 11.8years). Until 70 years, the simulated risk of PCa was 4.5% (295,279) (T1T2/T3T4 stages: 74%/26%) and the risk of PCa-related mortality was 0.4% (24,551). With CP strategy, the rate of patients eligible for dutasteride treatment grew each year to achieve 50.6% (mean treatment duration: 5.6years). Numbers of PCa and deaths avoided were 10,416 (-3.5%) and 591 (-2.4%), respectively. Within PCa-family-history population (859,967 men), a total of 51,480 PCa and 4,657 deaths occurred. Those numbers could be reduced by 2,580 PCa (-5.0%) and 175 deaths (-3.8%) with CP.