Precision Medicine in **Prostate Cancer**

Precision Medicine

Biomarkers play a role across the management of prostate cancer¹



Understanding the HRR pathway and *BRCA* alterations are both informative in prostate cancer^{4,14}

8	Percent of patients with <i>BRCA1/2</i> alterations ¹⁴		Germline	Somatic			
		Any stage	4%	7%			
		mCRPC	5%	11%			
^+	Understanding predisposition	7%–26% of males with germline <i>BRCA1</i> alterations and 19%–61% of males with germline <i>BRCA2</i> alterations will develop prostate cancer ^{15,16}					
ß	Prognostic implications	In one retrospective study of 1904 males diagnosed with prostate cancer, 12-year survival rate in patients with a <i>BRCA2</i> alteration was >30% lower compared with those without a <i>BRCA2</i> alteration ¹⁷					
	Predictive implications	BRCA alterations	ns may predict response to PARPis ⁴				

Consider germline and somatic testing in appropriate patients⁴

Prostate cancer biomarkers may be identified through both germline and somatic testing^{4,15}



Germline testing

Identifies biomarkers in DNA that are **inherited** and expressed in cells from anywhere in the body⁵

Somatic testing

Identifies new mutations in DNA that are **expressed by cancer cells**⁵

There are limitations for performing germline or somatic testing alone:

Up to 50% Up to 20%

of actionable DDR mutations may be missed by germline testing alone¹⁸

of patients will have mutations missed by somatic testing alone¹⁹ Combining somatic and germline testing may be appropriate for assessing genetic disposition, prognosis, and predicting likelihood of treatment response in some patients with prostate cancer^{4,15}

Overview of the National Comprehensive Cancer Network[®] (NCCN[®])* recommended biomarkers for prostate cancer molecular testing^{4,15}



When considering testing, it is important to check historical records for prior germline and/or somatic testing to be aligned with guidelines^{4*}

The multidisciplinary team's role is important in optimizing patient care^{20,21}

				P	roanostic	
Diagnostic		c	Advanced practitioner		rognootie	
			Pathologist Radiologist/Nuclear medicine physician	Medical oncologist Radiation oncologist		
			Genetic counselor			
					Predictive	
Geneti			ic disposition			

An effective multidisciplinary team (MDT) can help with^{20,21}:

- · Efficiency and accuracy of diagnosis and biomarker testing
- Adherence to evidence-based guidelines
- The influence of bias on treatment decisions
- Patient outcomes

MDTs collaborate so that patients receive coordinated, evidence-based care using shared decision-making to tailor treatment to the patient across the course of disease²⁰

Solutions start with a conversation

Take action and speak to **J&J** Precision Medicine

*NCCN makes no warranties of any kind whatsoever regarding their content, use or application and disclaims any responsibility for their application or use in any way. [†]NCCN Guidelines[®] include ATM, BRCA1, BRCA2, CHEK2, HOXB13, and TP53 as examples of genes for germline testing.¹⁵

*Because dMMR and MSI-H can be caused by MMR gene mutations, NCCN Guidelines recommend genetic counseling to assess the possibility of Lynch syndrome if dMMR or MSI-H are found.4

ctDNA, circulating tumor DNA; DDR, DNA damage response; HCP, healthcare professional; HRR, homologous recombination repair; mCRPC, metastatic castration-resistant prostate cancer; NCCN, National Comprehensive Cancer Network; PARPis, poly-ADP ribose polymerase inhibitors; PSA, prostate-specific antigen.

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