Decipher Test Impacts Treatment Decision-Making among Patients with Biochemical Recurrence after Radical Prostatectomy: Results from the Multicenter Prospective PRO-IMPACT study

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Background:
Patients and providers have tremendous uncertainty as they decide on the appropriate timing for intervention with salvage radiation therapy (SRT) for suspected local recurrence after radical prostatectomy (RP). We prospectively evaluated the impact of the Decipher® test (GenomeDx Biosciences Inc., Vancouver), which predicts metastases after RP, on patient and provider decision quality.

Methods
115 salvage patients were enrolled by 43 urologists from 19 community and academic practices. We included patients with rising PSA after RP. Participating physicians provided a management recommendation before and after exposure to Decipher test results. Patients completed validated surveys on health-related quality of life, decisional conflict, and prostate cancer-related anxiety

Results
Median patient age at enrollment was 63 years; 43% had pathologic T3 stage classification and 49% had positive surgical margins at RP. Decipher classified 33%, 25%, and 42% as low-, intermediate-, and high-risk, respectively. Pre-Decipher, 58.3%, 32.2% and 9.6% of patients were recommended for observation, SRT, and other treatments, respectively. 32% (95% CI 24-42%) of management recommendations changed post-Decipher, including 18% of Decipher low-risk patients and 50% of Decipher high-risk patients. Patients' Decisional Conflict Scale (DCS) scores decreased (indicating higher decision quality) after exposure to Decipher test results (median DCS pre-Decipher 27 [IQR 16-41], post-Decipher DCS 23 [IQR 4-30], p<0.001), with greatest decreases in the subdomains of decision uncertainty and decision support. Patients with low-risk Decipher results experienced a significant reduction in general prostate cancer anxiety (p=0.05). Among physicians, median DCS scores decreased from 33 [IQR 26-36] to 29 [IQR 22-34] (p<0.001). Decipher results were associated with the decision to pursue SRT and other treatments in multivariable logistic regression (OR 1.41; 95% CI 1.09-1.81, p=0.01).

Conclusions
Knowledge of Decipher results was associated with treatment decision-making among patients with recurrence after RP. Patients found to be low risk for metastases by Decipher had higher rates of observation recommendations and patients at high risk had higher rates of additional treatment recommendations including SRT. Decision quality was improved and prostate cancer-specific anxiety was decreased among patients considering SRT after RP exposed to Decipher results.

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