A Pharmacogenomic Decision Support System for Palliative Care

A study published in *Journal of Palliative Medicine* describes the development and testing of a decision support system for palliative care based on pharmacogenomics.

Pharmacogenomics describes the variation in drug response due to individual genetics. Learning how genetics affect the pharmacokinetics or pharmacodynamics of specific drugs will likely lead to new evidence-based clinical guidelines. This is especially useful for drugs like opioids that possess a substantial risk for adverse effects and where polymorphisms can affect the drug's performance. Given this information, clinicians can select and administer drugs with more confidence that the benefits will outweigh the risks. To incorporate pharmacogenomics, laboratory testing of patient samples is required. Pharmacogenomic interactions then need to be identified and communicated to front-line clinicians. Decision support systems could provide clinical recommendations about drug selection, drug switching, dose adjustment, or clinical monitoring based on the patient's genetic profile in such a paradigm.

The feasibility of such a system was tested in a prospective, single-arm feasibility trial at two hospice and palliative care services providers—Four Seasons Compassion for Life in Flat Rock, North Carolina, and MJHS Hospice and Palliative Care in New York City. Twenty clinicians and 100 patients were enrolled. Buccal samples were used for laboratory testing. A pharmacist using the proprietary MedWise™ platform evaluated the current medications in terms of genotype and phenotype and created a standardized report describing potential interactions and recommended actions to lower the associated risk. These reports showed 462 drug-gene interactions among 74 drugs and 691 drug-drug interactions among 77 drugs. Only 4 and 16 patients had no drug-gene or drug-drug interactions, respectively. Clinicians used this information to change treatments in 55 (55%) patients.

Almost all clinicians felt that the system was likely to improve the care quality; all agreed to recommend the system to colleagues. Overall, the pharmacogenomic decision support system was assessed as feasible for palliative care.

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Reference:

Bull JH et al. (2021) Feasibility and Acceptability of a Pharmacogenomic Decision Support System in Palliative Care. Journal of Palliative Medicine, 25(2), 219-226.

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