Strategies for DPYD Testing Prior to Fluoropyrimidine Chemotherapy in the United States

T. Tracksdorf1, S. Pearse2, D.M. Smith3, S.A. Scott4, T.T. Ho5, C.L. Aquilante6, J.N. Patel7, E.J. Cicali8, J.K. Hicks9, D.L. Hertz1

1University of Michigan College of Pharmacy, 2University of Michigan School of Public Health, 3Georgetown University Medical Center, 4Stanford University School of Medicine, 5Moffitt Cancer Center, 6University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences, 7Atrium Health Levine Cancer Institute, 8University of Florida College of Pharmacy

INTRODUCTION

• Patients with dihydropyrimidine dehydrogenase (DPD) deficiency are at high risk for severe and fatal toxicity from fluoropyrimidine (FP) chemotherapy[1]
• Pre-treatment DPYD/DPD testing is standard of care in many countries but not the United States (US)[2]
• Objective: Assess current pre-treatment DPYD testing implementation approaches in the US

METHODS

• Respondents
  • US sites that have implemented pre-treatment DPYD testing or plan to implement soon
• Survey
  • 22-item online survey distributed via relevant organizations (MASCC, PGRN, CPIC) and social networks from August through October 2023
  • Asked about the site’s DPYD testing program, including test ordering, interpreting and reporting
• Data Analysis
  • Data from 24 unique sites were analyzed using descriptive analysis

RESULTS

• 67% of sites tested only selected patients who were prescribed FP chemotherapy (Figure 1)
  • Selection criteria included type of cancer and clinician preference
• Only ~50% of sites had a systematic test ordering process (Figure 2)
  • Others require clinician to remember
• 54% of sites used commercial testing laboratories (Table 1)
  • OneOme used most frequently (29%)
• 67% of sites used a multi-gene panel (Figure 3)
  • 86% tested ≥4 actionable DPYD variants

SUMMARY

• Implementation approaches vary, and many sites lack robust, institution-wide systems to maximize testing effectiveness
• These findings underline the need for best practices to guide DPYD testing implementation

WORK CITED