

PGX Testing at Shodair Hospital Psychiatric Inpatient and Residential Units

- Hypothesis 1: Testing will result in better management—anticipation of drug interactions and side effects, more rational use of medications, fewer ADRs, important information for the patient
- Hypothesis 2: Children admitted to Shodair have failed outpatient therapy and may have a higher frequency of deleterious PGX alleles



RM 13 yo Male

Dx: Bipolar, ADHD, ODD

Problems: Suicidal (depression)

Current Meds	Med History	PGX Results	Implications
Buspar Concerta Zyprexa	Strattera Ativan Prozac (agitation)	1A2: EM 2C9: EM 2C19: IM 2D6: IM	1A2: None 2C9: None 2C19: None 2D6: Buspar (tapered, Wellbutrin added) Continue Zyprexa Abilify (sub/inh 2D6) added at low dose



EP 13 yo Male

Dx: Bipolar, Hx of Abuse

Problems: Anger, aggression

Current Meds	Med History	PGX Results	Implications
Buspar Ativan	Seroquel (sedation) Depakote	1A2: Hyperinducer 2C9: IM 2C19: IM 2D6: IM	1A2: No inducers 2C9: None 2C19: None 2D6: Started low dose Abilify, did well DC Ativan Continue Buspar(3A4) Test helpful



DP 8yo Male

Dx: PTSD (abuse), ADHD, Borderline IQ,
Bipolar -> Schizoaffective DO

Problems: Aggression

Current Meds	Med History	PGX Results	Implications
Wellbutrin Depakote Metadate Zyprexa	Concerta Risperdal Buspar Clonidine Effexor Seroquel- EPS (3A4, minor 2D6) Paxil Klonopin	1A2: Hyperinducer 2C9: EM 2C19: PM 2D6: PM	1A2: Zyprexa, no inducers 2C9: None, Depakote 2C19: None 2D6: Zyprexa 60% dose Metadate, Wellbutrin inhibitors



KC 14 yo Female

Dx: PTSD (abuse, P and S)

Problems: Aggression, anxiety

Current Meds	Med History	PGX Results	Implications
Cymbalta Concerta	Ritalin Zoloft (GI, fatigue) Seroquel Wellbutrin Lexapro Prozac (sedation)	1A2: Hyperinducer 2C9: EM 2C19: EM 2D6: IM	1A2: No inducers 2C9: None 2C19: None 2D6: Cymbalta DC (?psychosis), Risperdal (96%) and Desyrel (3A4) started—both inhibit as does Concerta; Desyrel 2D6 metabolite anxiogenic



KJ 10 yo Male

Dx: Bipolar/Mood DO, ADHD, PDD-NOS

Problems: Aggression, Hallucinations

Current Meds	Med History	PGX Results	Implications
Risperdal Focalin Klonopin Paxil ?Versed for surgery ?add Prozac or Wellbutrin	Ritalin (tics) Seroquel (EPS) Abilify (agitation) Geodon Zoloft Effexor Zyprexa (not tolerated)	1A2: Hyperinducer 2C9: EM 2C19: IM 2D6: EM	1A2: No inducers 2C9: None 2C19: Prozac 2D6: None Started Lithium, Seroquel, Tenex, Metadate, Klonopin cont'd, Wellbutrin better choice



The 3 Variables that Determine Drug Response

Site of Action	Drug Concentration at Site of Action	Underlying Biology of Patient
Affinity for site Intrinsic activity at site	Absorption (compliance) Distribution Metabolism Elimination (ADME)	Genetics Age Disease Environment (GADE)

Preskorn SH. Clinical Pharmacology of Selective Serotonin Reuptake Inhibitors. Caddo, OK: Professional Communications, Inc; 1996.
<http://www.preskorn.com>.

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PGX Testing at Shodair Hospital Psychiatric Inpatient and Residential Units n=5

- Hypothesis: Testing will result in better management—anticipation of drug interactions and side effects, more rational use of medications, **information for the patient FOR THE MINORITY**
- Hypothesis: Children admitted to Shodair have failed outpatient therapy and may have a higher frequency of deleterious PGX alleles **MAYBE**

