Clinical Practice Patterns and Potential Barriers to Generic Drug Use in Special Populations

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BACKGROUND

Clinical practice guidelines (CPGs) and other literature on recommendations and practices of professional medical organizations are used to support clinician decision making. However, these documents may not always be straight forward to implement for special populations such as children, older adults, women, racial/ethnic minorities, and individuals with impaired kidney or liver function. While generic drug substitution is broadly recommended in the medical community, specific organizations' clinical guidelines may not always agree with this broad recommendation.

The purpose of this study was to collect information on practice patterns and identify potential barriers to generic drug use from CPGs. The study focused on special populations, since clinicians may question how these patients' unique physical, biological and physiological characteristics impact generic drug bioequivalence. This poster summarizes the methods used in the systematic review as well as the review results and conclusions.

OBJECTIVES

- Describe clinical practice guidelines related to drug use in special populations
- Describe potential barriers to generic drug substitution in special populations
- Identify potential strategies to overcome barriers to generic drug use in special populations

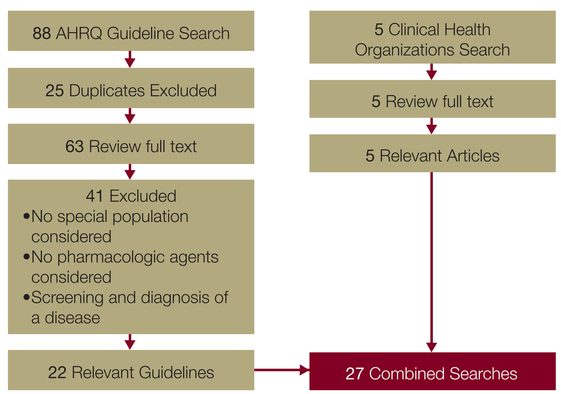
METHODS

We used relevant Medical Subject headings terms to search the National Guideline Clearinghouse database for Clinical practice guidelines (CPGs) focused on six chronic conditions: Epilepsy; Depressive Disorders; Bipolar Related Disorders; Psychotic Disorders; Anxiety Disorders; Hypothyroidism; and Immunosuppressive treatment following solid organ transplantations

- Reviewed CPGs in National Guideline Clearinghouse published between 2012 and 2016
- Developed article inclusion criteria
- Conducted a Qualitative Review of 88 CPGs and a final review of 22 CPGs

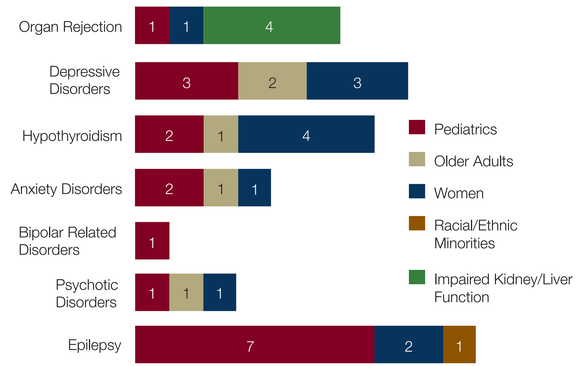
Also searched 14 relevant health care organization websites to identify relevant articles, guidelines that were not available in the National Clearinghouse

- Reviewed a total of five relevant articles with practice recommendations.

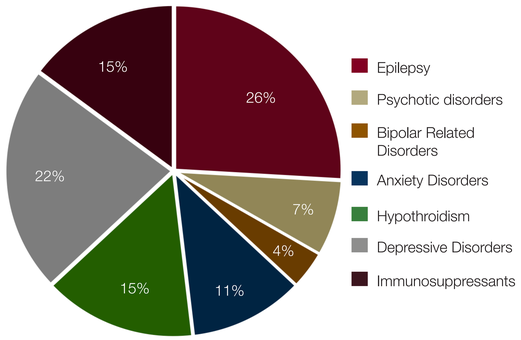


FINDINGS

RELEVANT CLINICAL PRACTICE GUIDELINES BY SPECIAL POPULATION (N = 27)



RELEVANT CLINICAL PRACTICE GUIDELINES BY DISEASE STATE (N = 27)



EPILEPSY

- **Pediatrics** - monitor side effects, drug interactions, neurologic improvement or deterioration when using antiepileptic drugs;
- **Women** - counsel pregnant patients on possible complications in the newborns when exposed to antiepileptic drugs in utero.
- **Racial/Ethnic Minorities** - Genetic variation between certain patient populations may result in alteration of the metabolism of anticonvulsant drugs.

PSYCHOTIC DISORDERS

- **Women** - maternal psychiatric illnesses if inadequately treated may result in poor compliance with prenatal care, inadequate nutrition, exposure to additional medication or herbal remedies, increased alcohol and tobacco use, deficits in mother–infant bonding, and disruptions within the family.
- **Older Adults** – Monitor patients undergoing antipsychotic treatment for side effects of as well as tapering the antipsychotic drugs if no clinically significant response.

BIPOLAR RELATED DISORDERS

- **Pediatrics** – Obtain baseline and follow-up assessment of symptoms, side-effects and laboratory tests of pediatric patients who are initiate on antipsychotic medications

ANXIETY DISORDERS

- **Pediatrics** – patients taking selective serotonin reuptake inhibitors (SSRIs) medications should be monitored for response, tolerability, and safety to these drugs
- **Older Adults** - start lower doses of psychotropic medications, and gradually increase dosage
- **Women** - Pregnant or breastfeeding women who have OCD, should be advised to start or stop a psychotropic drug so she can weigh the risks and benefits

HYPOTHYROIDISM

- **Older Adults** - levothyroxine dose of 50 µg daily should be considered when initiating therapy in patients with hypothyroidism, without evidence of coronary heart disease
- **Women** - monitor trimester-specific ranges of serum thyroid stimulating hormone (TSH) and use these values to make adjustments on levothyroxine dosage; only oral levothyroxine was recommended for treatment of maternal hypothyroidism

DEPRESSIVE DISORDERS

- **Pediatrics** – Close monitoring should occur when starting paroxetine, fluvoxamine, sertraline, citalopram, and escitalopram, as there is an increase in the risk of suicidal thinking and behavior
- **Women** - a detailed assessment of mood changes is recommended across the reproductive life history (e.g., menstruation, pregnancy, birth control including oral contraception use, abortions, and menopause)
- **Older Adults** - Older individuals are more sensitive to medication side effects (e.g., hypotension, anticholinergic effects) and require adjustment of medication doses for hepatic or renal dysfunction

IMMUNOSUPPRESSANTS

- **Pediatrics** – Advice to adolescent girls should receive advice about fertility, contraception, and safe immunosuppression during pregnancy and should avoid mycophenolate
- **Women** – The ideal immunosuppression for pregnancy is tacrolimus monotherapy, which should be maintained at therapeutic levels throughout pregnancy
- **Impaired Kidney and Liver function** – Monitor drug concentrations, blood pressure, glucose, potassium, complete blood count and renal function for patients undergoing calcineurin inhibitors (CNIs)

LIMITATIONS AND STRENGTHS

LIMITATIONS

- Search strategy yielded a small number of relevant medical guidelines related to the conditions of interest
- Main search database contained guidelines published between 2012 and 2016
- A search among medical healthcare organizations yielded fewer relevant clinical recommendations and guidelines than expected; no guideline offered specific recommendation regarding brand to generic substitution.

STRENGTHS

- Expanded CPG search strategy to include clinical recommendations, guidelines, and position statements published directly by medical healthcare organizations
- Established inclusion and exclusion criteria
- Data abstraction performed by multiple reviewers

RECOMMENDATIONS

- Researcher and health professionals (i.e. pharmacists, physicians, pharmaceutical companies etc.) should promote and enforce the need for continuing research so data regarding these special populations can be available and more accessible; these data can encourage pharmaceutical manufacturing and distribution to strictly adhere to the current laws
- Due to lack of evidence, most CPGs could not address the needs of special populations. More research is needed

CONCLUSIONS

Specific recommendations on generic substitution were absent in all the guidelines reviewed. Although several position papers that specifically addressed generic substitution were identified, these sometimes yielded contradictory information and not all were specifically focused on special populations. Based on the current evidence it is difficult to draw conclusions on practice patterns of and potential barriers to generic substitution in special populations.

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