

Generic Medication Nomenclature

A generic drug is the same, or bioequivalent to a brand name drug in dose, strength, route of administration, quality and indicated use.¹ Through training and experience, clinicians can develop an ability to identify the therapeutic class of a drug based on its generic name. How exactly do drugs get their names? The generic drug naming process utilizes standard stems or prefixes, suffixes, and roots to identify the pharmacologic property, the chemical structure of the medication, or both.² The United States Adopted Names (USAN) Council is responsible for choosing simple, informative, and unique generic drug names based on pharmacologic or chemical relationships.² Knowing the stem can help clinicians determine the drug class, potential indications and effects of an unfamiliar drug.

A few examples of drug stems are:

- -olol: a suffix for beta blockers which include atenolol, bisoprolol, esmolol, metoprolol, and propranolol. These drugs share similar properties and treat conditions such as heart failure, cardiac arrhythmias and hypertension.
- -oxetine: a suffix for antidepressants such as fluoxetine, vortioxetine, and paroxetine.
- -cillin: a suffix for penicillin antibiotics such as amoxicillin, ampicillin, and flucloxacillin.
- -prazole: a suffix for proton pump inhibitors (PPI) such as esomeprazole, pantoprazole, lansoprazole and omeprazole which reduce the production of acid in the stomach.

There are many exceptions to this general rule. For example, ARIPiprazole contains the -prazole drug stem, which as stated above, is typically associated with PPIs. However, ARIPiprazole is an antipsychotic medication. While drug stems may provide clues about a drug and its action, healthcare practitioners should review drug information for all unfamiliar medications prior to prescribing, dispensing or administering them to patients.²

There are hundreds of drug stems with multiple subgroups and new stems are constantly being created for recently approved medications.² For practitioners who have not been instructed to recognize the generic stems, classifying drugs into categories and recognizing mechanisms of action, indications and adverse events can be a challenge. Instruction should be provided to all clinicians on the stems associated with the most common drugs administered and for those drugs used to treat chronic conditions. Education should include the clinical effects and typical adverse effects for each drug class.

References

1. Food and Drug Administration (FDA). (2017). *Understanding Generic Drugs*. Retrieved from Food and Drug Administration: <https://www.fda.gov/drugs/resourcesforyou/consumers/buyingusingmedicinesafely/understandinggenericdrugs/ucm144456.htm>
2. Institute for Safe Medication Practices. (2017). *Nurse Advise-ERR*. Retrieved from Institute for Safe Medication Practices: <http://www.ismp.org/newsletters/nursing/issues/NurseAdviseERR201704.pdf>