Herbal Drug-Drug Interaction

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Basic Idea

- Herbal drug-drug interaction occurs when a herbal medicine changes the effect of conventional medicine.
- This interaction may increase drug effects, reduce drug effect, or cause unexpected harmful effects.

Causes

1. **Change in Drug Absorption**
   - Some herbs reduce the absorption of medicines from the stomach and intestine.
2. **Change in Drug Metabolism**
   - Some herb s affect liver enzymes that break down medicines.
3. **Change in Drug Excretion**
   - Some herbs affect kidney function and change how medicines leave the body.
4. **Similar Pharmacological Effects**
   - Some herbs produce effects similar to drugs and increase the total effect.

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Suitable examples

A. **Garlic with warfarin**
   - Garlic may increase bleeding risk when used with anticoagulant medicines such as warfarin.

B. **St. John's wort with oral contraceptives**
   - St. John's wort may reduce the effectiveness of oral contraceptive pills.

C. **Ginkgo with aspirin**
   - Ginkgo may increase bleeding risk when taken with aspirin.

D. **Ginseng with antidiabetic medicines**
   - Ginseng may lower blood glucose and may increase the risk of hypoglycemia.

Importance

- Herbal interactions can cause serious clinical problems.
- Patients often do not tell healthcare professionals about herbal medicine use.
- Healthcare professionals should ask patients about herbal products during medication history taking.

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WHO and AYUSH Guidelines for Safety Monitoring of Natural Medicine

- Safety monitoring of natural medicine means collecting, assessing, and preventing adverse effects caused by herbal and traditional medicines.
- WHO and AYUSH guidelines help improve the quality, safety, and rational use of natural medicines.

WHO Guidelines

A. Quality Assurance

- WHO recommends correct identification of medicinal plants and control of contamination.

B. Safety Assessment

- WHO recommends evaluation of toxicity, adverse effects, and possible interactions.

C. Pharmacovigilance

- WHO encourages reporting and analysis of adverse reactions related to herbal medicines.

D. Good Manufacturing Practices

- WHO recommends proper manufacturing, packaging, labeling, and storage.

E. Consumer Information

- WHO recommends clear information about dose, use, warnings, and precautions.

AYUSH Guidelines

1. Regulation of Traditional Medicines

- AYUSH provides standards for Ayurveda, Yoga, Unani, Siddha, and Homeopathy medicines.

2. Quality Control

- AYUSH recommends authentication of raw materials and testing for purity and strength.

3. Good Manufacturing Practices

- AYUSH requires proper manufacturing facilities, trained staff, and clean procedures.

4. Pharmacovigilance Program

- AYUSH promotes reporting of adverse reactions related to traditional medicines.

5. Labeling Requirements

- AYUSH requires proper labeling of ingredients, dosage, indications, precautions, and expiry date.

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Importance

- These guidelines help detect unsafe herbal products.
- These guidelines reduce contamination, adulteration, and misuse.
- These guidelines support safe use of natural medicines in healthcare.

Spontaneous Reporting Schemes for Biological Drug Adverse Reactions

- Spontaneous reporting is a system in which healthcare professionals, patients, or manufacturers report suspected adverse drug reactions.
- Biological drugs can cause adverse reactions such as allergy, immune reactions, infections, and loss of response, so reporting is very important.

Purpose

- To detect new adverse reactions after a biological drug is marketed.
- To identify rare reactions that may not appear during clinical trials.
- To monitor long-term safety.
- To improve patient safety through early warning signals.

Who Can Report

- Doctors can report suspected biological drug reactions.
- Pharmacists can report medication-related adverse events.
- Nurses can report reactions observed during or after administration.
- Patients and caregivers can report symptoms experienced after treatment.
- Pharmaceutical companies can report safety information collected from users.

What Should Be Reported

1. ### Serious Adverse Reactions
   - Life-threatening reactions, hospitalization, disability, or death should be reported.
2. ### Allergic Reactions
   - Rash, swelling, breathing difficulty, or anaphylaxis should be reported.
3. ### Injection or Infusion Reactions
   - Fever, chills, pain, redness, or low blood pressure should be reported.
4. ### Infections
   - Serious or unusual infections during biological therapy should be reported.

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5. Loss of Effect

- Reduced treatment response may suggest antibody formation against the biological drug.

Advantages

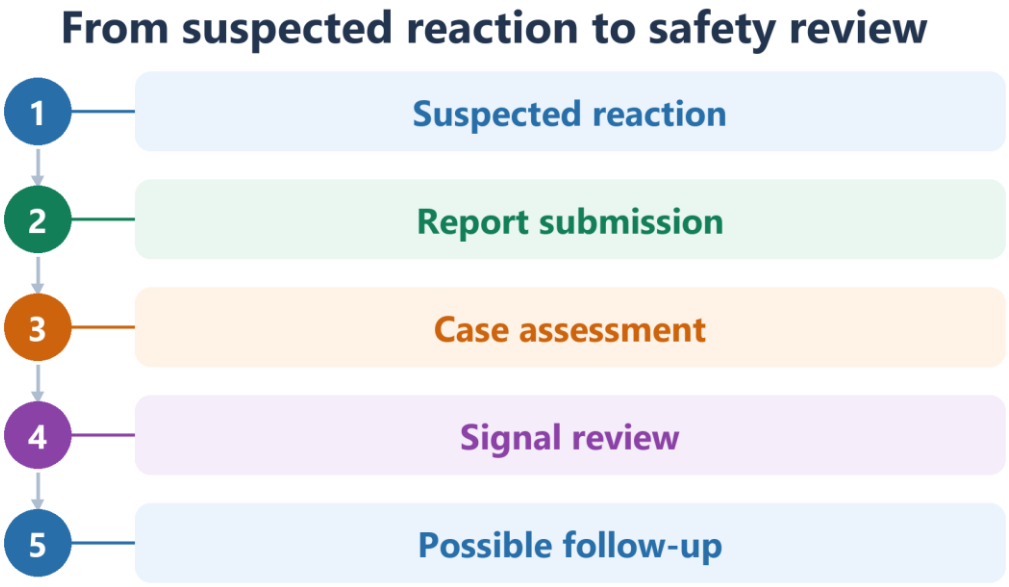
- It is simple and low-cost.
- It helps detect unexpected adverse reactions.
- It can cover a large population.

Limitations

- Many adverse reactions are not reported.
- Reports may contain incomplete information.
- It may be difficult to prove that the product caused the reaction.

Importance

- Spontaneous reporting helps identify safety signals.
- Reporting supports regulatory decisions.
- Reporting helps update warnings, precautions, and prescribing information.



Spontaneous reports support safety assessment, although a report alone does not establish causation

Bio Drug-Drug Interactions

- Bio drug-drug interaction occurs when a biological drug changes the effect of another medicine, or another medicine changes the effect of a biological drug.
- Biological drugs include monoclonal antibodies, vaccines, hormones, cytokines, enzymes, and other protein-based medicines.

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