Drugs to Avoid in G6PD Deficiency

Background:

Glucose 6-phosphate dehydrogenase (G6PD) deficiency is a genetic blood disorder where an acute attack of a haemolytic anaemia occurs. It is highly common in certain ethnic groups such as: Asians, Africans and Mediterranean and more prevalent in males more than females [1,2].

The clinical expression of glucose 6-phosphate dehydrogenase (G6PD) deficiency encompasses a spectrum of hemolytic syndromes, with the most prevalent G6PD variants (G6PD A- and G6PD Mediterranean). While affected patients are usually asymptomatic, some have episodic anemia while a few have chronic hemolysis [3].

The symptoms:

Sudden rise of body temperature and yellow colouring of skin and mucous membrane .

Dark yellow-orange urine .

Pallor, fatigue, general deterioration of physical conditions .

Heavy, fast breathing .

Weak, rapid pulse [2].

Severe acute hemolysis is induced by the sudden destruction of older, more deficient erythrocytes after exposure to certain triggers including drugs having a high redox potential or to fava beans, selected infections, or metabolic abnormalities [1,3].

These drugs according to their pharmacological groups and possibility of risk of are listed below:

G6PD Deficiency Drug Interaction

Definite Risk of Haemolysis		Possible Risk of Haemolysis	
Anthelmintic	β-Napthol Niridazole Stibophen	**Analgesics**	Acetylsalycylic Acid (Aspirin) Paracetamol (Acetaminophen)
Antibiotics	Nitrofurans: Nitrofurantoin Quinolones: • Ciprofloxacin • Moxifloxacin • Norfloxacin • Ofloxacin Chloramphenicol Sulfonamides: • Co-trimoxazole (Sulfamethoxazole + Trimethoprim) • Sulfamethoxazole • Sulfadiazine • Sulfapyridine • Salazosulfapyiridine	**Anticonvulsants**	Phenytoin
		Antidiabetics	Glibenclamide
		Antihistamines	Antazoline (Antisine) Diphenhydramine
		Antihypertensive	Hydralazine Methyldopa
		Antimalarials	Chloroquine and derivatives Proguanil Quinine
		Antimycobacterials	Isoniazide
Antimalarials	Primaquine	**Antiparkinsonism Agents**	Triphexayphenidyl (Benzhexol)
Antimethemo-globianmeic Agents	Methylene blue	**Cardiovascular drugs**	Dopamine (L-dopa)

Antimycobacterials	Dapsone Para-aminosalicylic acid (5-aminosalicylic acid)	**Gout Preparations**	Colchicine
		Hormonal Contraceptives	Mestranol
Genitourinary Analgesics	Phenazopyridine (Pyridium)	**Vitamin K Substances**	Phytomenadione
		Vitamins	Ascorbic Acid (Vitamin C)
		Others	Para-aminobenzoic acid

Note:

When prescribing drugs for patients with G6PD deficiency, the following three points should be kept in mind:

G6PD deficiency is genetically heterogeneous; susceptibility to the haemolytic risk from drugs varies; thus, a drug found to be safe in some G6PD-deficient individuals may not be equally safe in others;

Manufacturers do not routinely test drugs for their effects in G6PD-deficient individuals; the risk and severity of hemolysis is almost always dose-related.

References:

1) BNF69
2) G6PD.org
3) Uptodate.com