CHAPTER 15

COLCHICINE

Mehmet Demirel, MD, Ufuk Kavuzlu, MD.

Colchicine is a important drug in all of medicine world. Dermatology is one of the department which one colchicine has been popular in there.Although it is rather traditional drug; it is using at various disease at the moment and has taken very effective results about colchicine treatments.

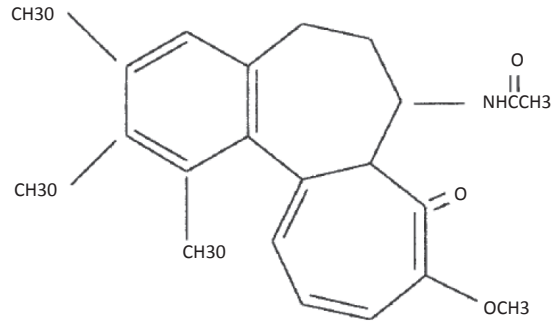


Figure 1. Colchicine' s structure

Colchicine is an alkaloid.[1] The source of colchicine is "Colchicum Autumale plant".[1] First using of colchicum for treatment was materialized by Alexander of Tralles in sixth century.[1] He used it in artrits.[1] In 1763, Baron Anton von Storck of Vienna tried colchicum for gout.[1]



Figure 2: Colchicum autumnale

MECHANISM

Main mechanism of the colchicine is affecting mictrotubule growth and formation, so it disrupts mitosis and this explains other microtubules associated effects.[2] It binds tubulin proteins and inhibits polymerization of microtubuls.[3] It's anti inflammatory effects by the agency of the ability to accumulating in the immun-mediated cells which named for "white blood cells", and disruptes their functions.[3] It blocks releasing inflammatory mediators from granulocytes, and interferes other functions of the granulocytes, such as migration, phagocytosis.[3] In this way colchicine decreases inflammation.

PHARMACOLOGY

Jejunum and ileum is absorbtion region of the colchicine.[4] The bioavailability range of oral colchicine is changing about %25 to %50.[4] Dominantly three proteins play role of colchicine's pharmatokinetic: tubulin, p-glycoprotein, cytochrome p450 3A4 (CYP3A4).[5] Tubulin is an intracellular receptor of colchicine and establishes it's plasma half life time.[6] p-glycoprotein is an efflux pump and it arranges tissue distributioning colchicine, like absorbtion, circulation, distrubution, elimination.[5] End lastly CYP3A4; it plays a key role of colchicine's biotransformaiton.[5] Hepatobiliar excretion is the major route of colchicine elimination[7], kidneys join this biotransformation less than %20.[8,9] And this drug's effects end after 24-48h.[10]

TABLE 1. Some drugs which disrupts colchicine metabolism

INHIBITORS AND INDUCERS OF CYTOCHROME P450 (CYP P450) AND SUBCLASS CYTOCHROME P450 3A4 (CYP 3A4)		
Inhibitors of CYP P450	**Inhibitors of CYP 3A4**	**Inducers of CYP 3A4**
Cimetidine	Diltiazem Toleandomycin Fluconazole Grapefruit juice Erythromycin	Rifampicin Phenobarbitol Phenytoin

serum creatine kinase level.[39] After stopping drug,return to normalcy creatine kinase levels and symptoms in 1 to 2 months.[39] On the other side it may cause renal failure as an acut effect.[40,41] Also it interferes hemathologic systems and it can disrupt anyone of the parameters.[2,42]Sometimes it even causes agranulocytosis.[2,42] But it usually observed at long time treatment.[2,42] The most serious side effect and problem is intoxication.[43] When patient take overdose it may causes multiorgan failure so it may end even death.[43] Another dramatical complication is explained to lossing volume in the active blood circulation that is named shock and usually occurs in first 72 hours.[44] For this reason hemodialys is not usefull for poisoning.[2,22]

It is reported a few Cutaneous adverse reactions such as: allergic reaction, urticaria,alopecia, toxic epidermal necrolysys.[45,46,47,48,49,50] TEN is reported only one patient and this patient took colchicine with alcohol.[47] Alopecia with colchicine is reversibl.[50]

Teratogenicity

Studies of colchicine didn't any increased risk to teratogenic effects for humans.[51,52,53] One case was reported by Cestari et al. This case is a trysomi 21 and cestari et al thinked this may be related with using colchicine.[54] Colchicine can interferes sperm number, motility; it can cause azoospermia.[55]

CONCLUSION

Colchicine treatment is a usefull modality besides rather inexpensive. It has wide indications but naturally effectivity is chancing indication to indication. Many studies and experience showed us; using colhicine in Amyloidosis, Condylomata acuminata, Behçet's syndrome, Scleroderma give more beneficial results than other dermatological indications. Because of it is a good-tolerated drug, it can be try easily to patient who has indication for colchicine.

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