

Review on (Catharanthus Roseus Linn) and It's Pharmacological Effect

Vishal D. Kad^{1*}, Rutuja Gaikwad¹, Vinayak D. Jadhav², Tejaswini H. Gholap³,
Vaijayanti S. Gholap⁴, Harshala T. Gholap⁵, Neha N. Dalavi⁶

Students of Samarth Institute of Pharmacy, Belhe, Maharashtra., India^{1*23456}

Department of Pharmaceutics, Samarth Institute of Pharmacy, Belhe, Maharashtra., India¹
vishalkad2002@gmail.com

Abstract: *Vinca alkaloid are a subset of medicine attained from the Madagascar periwinkle factory. Indian traditional system of drug ayurveda which focuses on the medical eventuality of shops. Medical shops have so numerous uses. The four major vinca alkaloids used in colorful cancer chemotherapies are vinblastine, vincristine(or semisynthetic derivations), vindesine, and vinorelbine from which two natural composites, vinblastine and vincristine and twosemi-synthetic derivations, vindesine and vinorelbine. They're naturally uprooted from the factory and have hypoglycemic and cytotoxic goods. They used to treat cancer, diabetes, Vincristine is a chemotherapeutic agent.*

Keywords: Botanical Classification, Vernacular Name, Chemical Constituents, Vincristine, Vinblastine

I. INTRODUCTION

Catharanthus roseus linn reverse- Vinca rosea, Madagascar periwinkle a imperishable factory is generally seen in tropical countries and are native to Madagascar and Southern Asia. The factory has spread over tropical and tropical corridor of India and grows wild each over the plains and lower foothills in Northern and Southern hills of India. In Malaysia it's locally called as Kemunting Cina. The periwinkle totem a symbol for stopgap for cancer cases is used by National Cancer Council of Malaysia The flowers produced by these shops are planted for ornamental purposes are of colours similar as pink, grandiloquent and white Madagascar periwinkle is used traditionally for number of affections similar as high blood pressure, infection and diabetes mellitus. Stem produces a milky tire which is a source for further than 70 indole alkaloids. Vincristine and vinblastine were insulated from this factory are well known Anticancer medicines for Hodgkin's carcinoma and childhand leukemia independently. The medium of action being binding to tubulin, therefore inhibit the metaphase of colalar mitosis. Near about 350,000 species of shops are set up on earth every factory have commodity medicinal value. Vinca alkaloids were discovered in the 1950's by Robert Noble and Charles Beer of Canada. Vinca were one of the first factory alkaloids to be developed for use asanti-cancer agents in humans.



BOTANICAL CLASSIFICATION

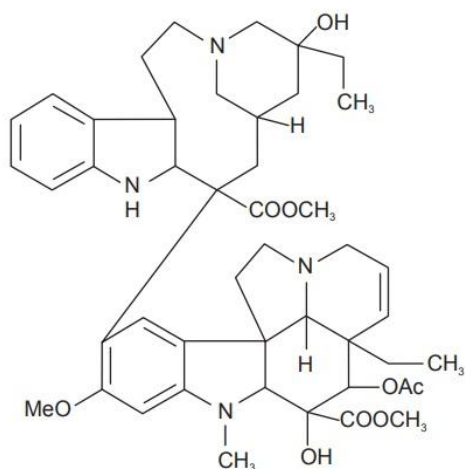
Botanical Name	Vinca Rose (Catharanthus Roseus)
Family	Apocynaceae
Kingdom	Plantae
Division	Magnoliopsida
Class	Magnoliopsida(Dicotyledons)
Order	Gentianales
Genus	Catharanthus
Species	C. roseus

VERNACULAR NAME

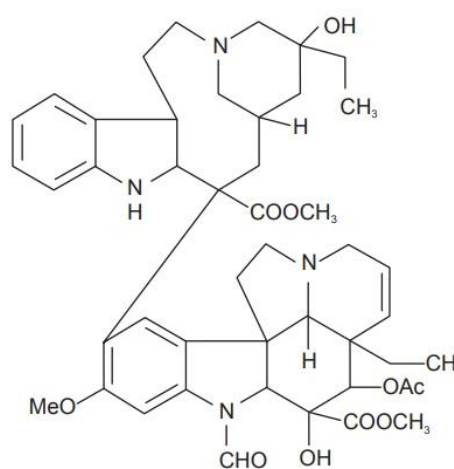
Sanskrit	Nityakalyani, Rasana
English	Cayenne, jasmine, old maid
Marathi	Sadaphul, Sadaphool
Hindi	Sada-bahar
Tamil	Cutukattu mali
Telugu	Billaganneru
Gujarati	Barmasi
Bangali	Noyontara
Malayalam	Banappuva, Nityakalyani

CHEMICAL CONSTITUENTS

Alkaloids are present in entire shrub but leaves and roots contain further alkaloids. About 90 alkaloids have been insulated from Vinca from are present in other species of Apocynaceae. The important alkaloids in Catharanthus are the dimer indole indoline alkaloids Vinblastine and Vincristine and they retain definite anticancer exertion. Vindoline and Catharanthine are indole monomeric alkaloids. It also contains monoterpenes, sesquiterpene, indole and indoline glycoside. Major being Alkaloids trem0.74 to0.82 important being vin- Anticancer exertion cristine, vinblastine catharanthamine vincoline. Other alkaloida six decayvinblastine leurosine, pleurozin. leurocristine. leurosi dine, vincolinine, vinacardine, roseading vindaltcine, roticine.



Vinblastine



Vincristine

MORPHOLOGICAL CHARACTERISTICS:-

STEM	Cylindrical, Branched, Solid, Reddish Green, Glabrous.
ROOT	Tap root, rarely branched.
LEAF	simple, opposite decussate, petiolate, extipulate, entire, mucronate apex, uncostate reticulate venation.
FLOWER	Pedicellate, bractate, hermaphrodite, actinomorphic, complete, pink, hypogynous.
HABIT	A Pennial herb.
INFLORESCENCE	flower arranged in axillary pairs.
CALYX	Polysepalous, glandular, green, inferior, quinquecuneate aestivate.
COROLLA	gamopetalous framing corolla tube, throat of corolla tube hairy forming a corona, contorted aestivate.
ANDROECIUM	free, epipetalous, alternate to petals, almost sessile, anthers dorsiflexed, yellowish.
GYNOECIUM	carpels, bicarpellary, syncarpous.

II. PHARMACOGNOSTICAL STUDIES

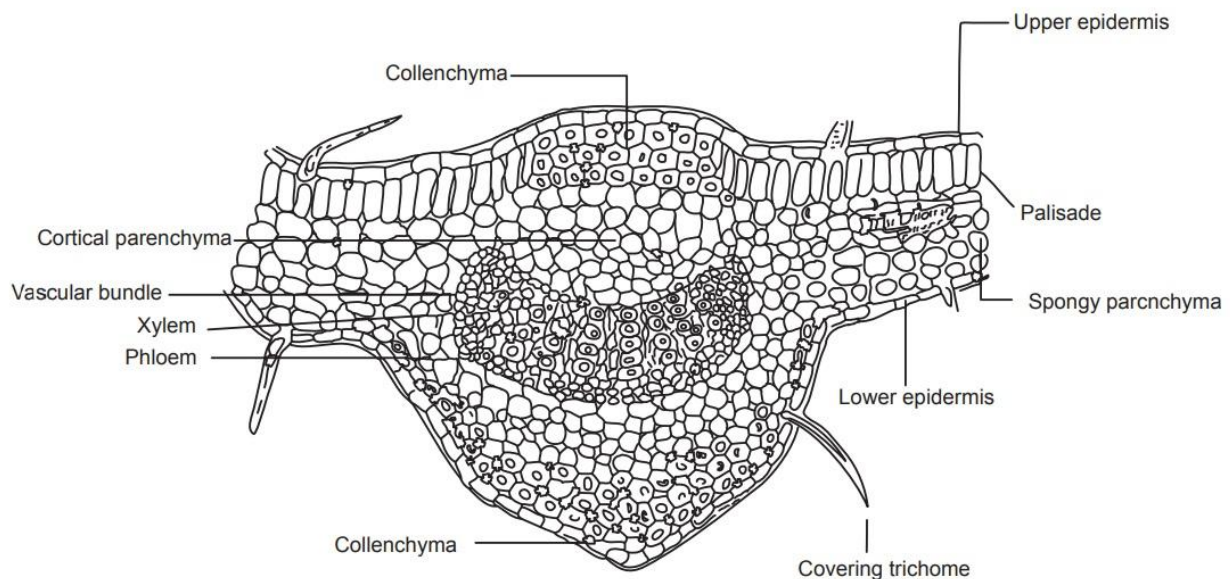
MACROSCOPICAL CHARACTERISTICS

The leaves are contrary, simple, petiolate, petioles long, rough or vocally pubescent, lamella elliptic, obovate or oblong-elliptic, blunt or retuse, mucronulate, base cuneate or subcuneate, frequently oblique, slightly decurrent; periphery entire, may or may not be hairy, membranous or thinly conspicuous. Upper face puberulus or glabrescent, dark shining green, lower face pubescent or nearly rough, light green, main side jitters rather near, arcuate, nervation not conspicuous.

MICROSCOPIC CHARACTERISTICS

Vinca has dorsiventral splint structure. Epidermis is a single subcaste of blockish cells covered with thick cuticle. It consists of uni-cellular covering trichome and cruciferous stomata. In the mesophyll region single subcaste of stretched and nearly packed precipice parenchyma cells are present just below the upper epidermis. In the midrib region two to three layers of collenchyma is present, both below the upper epidermis and above the lower epidermis. Vascular pack conforming of xylem and phloem is present in the middle of midrib region and rest of the intercellular space is covered by five to eight layers of spongy parenchyma. Calcium oxalate chargers are absent.

PHARMACOLOGICAL ROLE



ANTICANCER ACTIVITY

In clinical practice, the administration of C. Roseus is carried out intravenously, after which they're ultimately metabolized by the liver and excreted. Hair loss, supplemental neuropathy, constipation and hyponatremia are the major side goods of this medicines. To im- prove the remedial indicator, Semi-synthetic Catharanthus alkaloids similar as vinorelbine and vinflunine were developed. Vinorelbine and vinflunine ply their antitumor effect by binding to tubulin. Vinca alkaloids also called as mitotic spindle venoms they inhibit assembly of the spindle forms from microtubules, there by inhibiting mitosis in cell cycle. Vinca alkaloids hence successfully help cancer cells from dividing. Different Vinca alkaloids have their own unique parcels. The monoterpenoid indole alkaloids(MIAS) of Madagascar periwinkle(Catharanthus roseus) continue to be the most important source of natural medicines in chemotherapy treatments for a range of mortal cancer. The anticancer active ingredients Vinblastin and Vincristine are deduced from the splint and stem of vinca. They inhibit the growth of mortal excrescences. Vinblastin is used experimental or treatment of neoplasmas and for Hodakins complaint, choric melanoma. Vincristine and anothers active constituents are used for leukemia in children.

ANTIDIABETIC ACTIVITY

Hypoglycemic exertion was set up by using the dichloromethane methanol excerpt(11) of the leaves and outgrowths of C roseus factory in streptozotocin convinced diabetic rat model at the cure of 500 mg/ g that has been administered orally for 7 and 15 days. 48.6 and 57.6 hypoglycemic exertion was observed and farther treatment for a period of 30 days has handed complete protection against SIZ challenge(75 mg/ kgi.p.). Enzymes conditioning of glycogen synthase, glucose 6- phosphate- dehydrogenase, succinate dehydrogenase and malate dehydroge nase were set up to be dropped in the liver of diabetic creatures which would be significantly bettered after treatment with excerpt at cure 500 mg/ kg pn for 7 days. Results indicated the increased metabolization of glucose in treated rats with the increased situations of lipid peroxidation. Different excerpts of C roseus have the capability to ameliorate blood force to the brain performing in enhanced oxygen and glucose force to brain. This also limits the gratuitous blood clotting. It has been set up that this factory is able of adding insulin product and application of sugar and application of sugar in blood. an alkaloid Alastonin set up in dinghy has been used to regulate blood pressure. For diabetic treatment C roseus alkaloid has been retailed under the personal name Vinculin

ANTIMICROBIAL ACTIVITY

antibacterial eventuality against S aureus, S. citre us, and E coli and P aeruginosa Catharanthus roseus is an important medicinal factory for new medicinals since utmost of the bacterial pathogens are developing resistance against numerous of the presently available antimicrobial medicines. shops have proved to be significant natural coffers for effective chemotherapeutic agents and offering a broad diapason of exertion. It's demonstrated that mutant splint excerpts had good bacteria while B. subtilis wasn't told. The change in antibacterial exertion between mutant and control factory eaves might be due to the genomic changes, aroused by the mutagen similarly impacting the emulsion and position of bio-active composites like vincristine, Vinblastine, virdoline in towel, which might be obligation for antibacterial property of periwinkle leaves as also reported before.

ANTIOXIDANT ACTIVITY

The part of oxidative stress is known among the cases of diabetes as the position of reactive oxygen species was high among diabetic cases. This oxidative stress is generated in diabetic cases due to nonstop high glucose situations that beget to drop in the defence medium for antioxidant enzymes within the body. The reduction of the antioxidant defence medium leads towards the generation of hydroxyl revolutionaries accordingly results in lipid peroxidation. The ideal of this study is to examine the efficacy of Vincamine excerpts as antihyperlipidemic and antioxidant in diabetic rats. To estimate the antihyperlipidemic and antioxidant goods of Vincamine, adult BB Wistar rats, importing 150- 170 g were attained and divided in six groups. Blood analysis was taken measure the observed parameters. The findings showed vincamine display antioxidant, hypoglycaemic and hypolipidemic activity. It's concluded that vincamine has a defensive part and acts as a good antioxidant exertion along with effective antidiabetic goods.

ANTHELMINTHIC ACTIVITY

The anthelmintic exertion of whole factory excerpts of *Catharanthus roseus* was estimated as per the system reported by gusto et al. Seven groups of creatures with three earthworms in each groups, each earthworm were separate released into 20 ml of asked expression in normal saline. Group carthworm were released in 20 ml normal saline in a clean petri plate and were maintained as control. Group II, III, IV, V, VI earthworms were released in 50, 100, 150, 200 and 250 mg/ ml of ethanol excerpt in 20 ml of normal saline independently. Group VII earthworms were released in normal saline containing standard medicine piperazine citrate(50 mg/ ml). Earthworms were observed the time taken for palsy and the time taken for death was covered and proved in twinkles Palsy time was anatomized grounded on the gesteof the earthworm with no reanimation body state in normal saline medium.

ANTIDIARRHEAL ACTIVITY

Anti-diarrheal property is tested in wistar rats by the ethanolic splint excerpts and castor oil painting as an trial of diarrobea has pretreatment excerpt. The effect of anti-diarrheal was shown by the cure dependent inhibition of the castor oil painting convinced diarrhea.

III. CONCLUSION

In this review literature we're banded about the vinca. *Vinca Catharanthus roseus* was delved from the ancient time for their phytochemical factors and their remedial effect and one of the most available shops and it has the life- saving property. In vinca factory constitute of vinblastin and vincristine, on the chemotherapy drug it's used for several types of Cancer.

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