A REVIEW ON PLANTS IN MALIGNANCY WITH COUNTERACTIVE ACTION
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DOI: 10.7897/2277-4572.081118

Received on: 01/01/19 Revised on: 2001/19 Accepted on: 2601/19

ABSTRACT
Malignancy disease is the II noticeable reason for death around the world. There are different kinds of tumors, for example, skin malignant growth, bosom disease, and colorectal disease. These days, treatment of malignancy is pricey. There is more noteworthy requirement for progressively productive and less harmful helpful and preventive methodologies. Phytochemicals have been utilized for the treatment of disease since the beginning because of their wellbeing, low poisonous quality, and general availability. Medicinal plants are considered as a storehouse of different bio-dynamic mixes and utilized for long time because of its helpful properties. A few plants determined mixes indicate potential job against malignancy treatment.

KEYWORDS: Malignancy, Medicinal plant, Prevention, Future direction.

INTRODUCTION
Malignancy is one of the lethal maladies which are described by the sporadic cell expansion. The most widely recognized purpose for the malignant growth is way of life changes. Medicinal plants have different points of interest over synthetic items, since plants determined mixes are increasingly tolerant and non-harmful to the typical human cells. Currently the utilization of an expansive no. of anticancer specialist has expedited extraordinary mischief the human body. Furthermore, the fundamental downside is the smoother the safe system. Many regular happening mixes known to group's cytotoxicity impacts, as they show potential to devastate malignant growth cells. Due to these focal points of prescriptions plants they are sought after and a few types of therapeutic plants they are popular and many plant species has been chosen for the planning for anticancer medicines. The quickly multiplying disease cells experience a few adjustments in the digestion of lipids, fat, starch and proteins to meet the cell demand.

MALIGNANT GROWTH
Malignant growth is the ailment in which gathering of unusual cell develop wildly by slighting the ordinary standards of cell division. Cancer cell spread other piece of the body by blood dissemination. Cell is the fundamental unit of life and our body made up of various sort of cells. If cells are harmed and supplanted by new cells in customized way this procedure called "apoptosis". Furthermore, apoptosis process turns out badly then our DNA hereditary material in charge of direction or division of typical cell growth. If DNA winds up changed and harm in this condition cell don't kick the bucket and constantly partition and these cell frame additional mass of tissue. This condition called tumor.

Tumor are 2 types
- Benign tumor
- Malignant tumor

Benign tumor does not invade nearby tissue or spread to other parts of the body this tumor not cancerous. And benign cancer form anywhere. Some time it can be dangerous if they can spread vital organs like brain. Malignant tumor is cancerous. This tumor producing metastases and this tumor contains cancerous cell. It is extremely hard to locate the explicit reason for malignant growth. For the most part, tobacco use, liquor utilization, contamination, tainted operator these are the basic explanations behind malignancy disease.

Characterization of Malignant growth
Malignant growth is partitioned by kind of cell
- Carcinoma (impact epithelial tissue)
- Sarcoma (happen in connective tissue)
- Leukemia (influence blood shaping tissue)
- Lymphoma (influence the lymphatic tissue)
- Myeloma (starts in bone marrow)
- Blastoma (starts in embryonic tissue)

Kinds of Malignant growth
- Lung malignant growth
- Skin malignant growth
- Breast malignant growth
- Cervical malignant growth
- Blood malignant growth
- Brain malignant growth
- Colon malignant growth
- Prostate malignant growth
- Neurofibromatosis
- Ovarian malignant growth
- Multiple endocrine neoplasia
- Leukemia
- Retinoblastoma
- Tuberosous Reason for cancer
Cause of malignant growth

Carcinogens

The major cause of human cancer is exposure to environmental carcinogens: these include natural adman-made chemicals, radiation virus34eff. Many types of carcinogens are –

- Genotoxic carcinogen - primary, direct acting alkylating agents.
- Procarcinogen – polycyclic aromatic hydrocarbons
- Epigenetic carcinogens – promoters, solid state, hormones.
- Unclassified –peroxisome proliferators34,35.

Cell cycle: mutations in gene can cause cancer by accelerating cell division rates or inhibiting normal controls on the systems, such as cell cycle arrest cell death. A mass of cancerous cell grows, and it develop into a tumor. For cellular a cell to replicate it necessary:66,57

- Faithfully reproduce its DNA
- Partition the DNA and cytoplasm equally to form 2 daughter cells.

Bacteria are responsible for 20% human cancer.

Development of Malignant growth

Step-1 Inactivation of tumor suppressor gene by mutation
Step-2 Proliferation of cells
Step-3 Inactivation of DNA repair gene by mutation
Step-4 Mutation of proto-oncogene creation
Step-5 Malignant growth38,39

Treatment for Malignant growth

- Surgery
- Chemotherapy
- Radiation Therapy
- Biologic or Targeted therapy
- Natural product40.

Natural products for treatment of malignant growth

- Safer
- More natural
- Holistic
- Symptom relief41,42

MEDICINALS PLANTS

Catharanthus roseus-It has a place with Apocynaceae family. This plant called a supernatural occurrence in the anticipation of youth leukemia and malignancy treatment. It contains more than 120 terpenoid indole alkaloids they indicate solid pharmacology properties. 2 alkaloids in Catharanthus roseus present (vinblastine & vincristine) these alkaloids demonstrate the anticancer medication properties. These alkaloids with tubulin and keep the cell from making the spindle63-45.

Figure 1: Catharanthus roseus (Adapted Source: Wikipedia)

Centella asiatica -It has a place with family Apiaecae. It basic name is brahmanamanduki in hindi. This plant contains progressively dynamic mixes like hydrocotyle, sterol, flavonoid, vallerne. Ethanolic concentrate of this plant can be decrease the no. of tumor knobs and hinder the improvement of benzopyrene46,47.

Figure 2: Centella asiatica (Adapted Source: vikaspedia.in)

Withania somnifera -Otherwise called ‘Ashwagandha’ in Hindi. It has a place with the family Solanaceae. Its principle constituents are withanolides, withaferins, sitoindosise. Impact of Withania somnifera on the improvement of chemotherapy prompted weakness and personal satisfaction in bosom disease patients. Additionally, diminishes the dimension of a critical cancer prevention agent in tumor cells48,49.

Figure 3: Withania somnifera (Adapted Source: keithcleversley, Jan, 2002)

Plumbago zeylanica -Basic name is white leadwort, chitrak. It is found in warm piece of India. What's more, have a place with family Plumbaginaceae. Plumbagin is the napthoquinone, plumbagin segregated from the foundations of this plant and it have an antitumor movement by controlling the hormone refractor intrusive prostate cancer50,51.
Curcuma longa - Otherwise called haldi and has a place with the family Zingiberaceae. Found in southern Asia and Bangladeshi. It contains curcumin, curcuminoids, fundamental oil, turmerone, alkaloid etc. Curcumin have defensive impact by hindering the development of a few angiogenesis partners and tumor related gene52, 53.

Cannabis sativa - This plant has a place with the family Cannabinaceae. Found in South Africa. It contains cannabinoids, cannabino, anandamide, pinene and so forth. Cannabinoids prompts malignant growth cell demise by apoptosis and represses multiplication disease cell54, 55.

Astragalus membranaceus - Have a place with the family Fabaceae and usually known as Mongolian milkvetch. It contains Astragaloside, Astraglen, quercetin, kaempferol etc. This plant found in china. This plant is generally utilized for the liver disease. Swainsone is the essential compound in this plant which demonstrate the impact on liver cancer56, 57, 58.

Terminalia arjuna - This tree has a place with the family Combretaceae, it is otherwise called arjuna. This tree have numerous constituents like luteolin, gallic acid. Luteolin has well established record of inhibiting various cancer cell lines. Casuarinin a hydrolysable tannin isolated from bark of T. arjuna inhibits human non- small cell cancer A549 cell by blocking cell cycle progression in the G0/G1 phase59, 60.

Eclipta Alba - This is the herb and furthermore known as false daisy.it is has a place with the family Asteraceae. Methanolic concentrate of this plant separates repressed the expansion of colon disease cells61.

Ginkgo biota - It is the Chinese drug plant. In vitro ponders portray this plant have anticancer properties. Ginkgo biloba contains Ginkgolide-B which hinder the development of malignancy by managing movement of the platelet actuating factor62, 63.
**Laminaria japonica** - It is has a place with the types of dark colored green growth and usually known as "kelp". It is have a place with the family Laminariales. It have solid anticancer action and hinder the development of cancer\(^64,65\).

**Petasites japonicus** - It developed in eastern Asia, its regular name is Japanese butterbur and belongs to the family Asteraceae. This plant was utilized to decrease cell capacity and inhibiting the Akt/mTOR\(^66,67\).

**Oroxylum indicum** - It is developed in India timberlands and sodden zone. Its normal name is Indian trumpet tree and belongs to the family Bignoniaceae. Methanolic concentrate of this plant natural product quelled blast of HL-60 Cell line\(^68,69\).

**Rheum officinale** - Base of this plant utilized as Chinese medication. It belongs to the family Polygonaceae. What's more, its normal name is Chinese rhubarb. In numerous writing detailed this root utilized against tumor if there should be an occurrence of hepatocarcinoma\(^70\).

**Bergenia ciliata** - It has a place with the family Saxifragaceae this plant has different therapeutic properties. Its regular name is winter begonia. Fluid and methanolic concentrate of bergenia ciliate rhizome utilized against tumor and chemoprevention\(^71\).
Tinospora cordifolia - It otherwise called ‘Guduchi’. Also, has a place with the family Menispermaceae and found in Sri Lanka. Foundation of this plant contains different alkaloids like tinosporin, isocolumbin, columbin. Tinospora cordifolia capable to kill hela cells and this demonstrate the capability of this plant as an anticancer agent.\textsuperscript{73}

Raphanus sativus - Has a place with the family Brassicaceae and found in Southeast Asia. It has antitumor action and anticancer movement. 4 methylsulfinyl-3-butenyl isothiocyanate (MTBITC) present in Raphanus sativus. L and this dynamic compound in charge of the anticancer activity\textsuperscript{74,75}

Ardisia crenata - Has a place with the family Myrsinaceae. It normal name is coral shrubbery. It found in warm atmosphere of tropical. Anticancer properties of this plant because of quality of ardisiacrispin A and B. This dynamic compound restrains multiplication of uncontrolled liver cell line by microtubule interruption and acceptance of proapoptotic activities\textsuperscript{77,78}

<table>
<thead>
<tr>
<th>S.No</th>
<th>CLASS</th>
<th>DRUG</th>
<th>PLANT</th>
<th>SOURCE</th>
<th>FAMILY</th>
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<tbody>
<tr>
<td>1.</td>
<td>Vinca alkaloids</td>
<td>Vincristine, vinblastine</td>
<td>Catharanthus roseus</td>
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<td>2.</td>
<td>Taxanes</td>
<td>Paclitaxel</td>
<td>Taxus brevifolia</td>
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<td>3.</td>
<td>Colchicine</td>
<td>Demecolcine</td>
<td>Colchicum autumnale</td>
<td>Liliaceae</td>
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<tr>
<td>4.</td>
<td>Maytansinoid</td>
<td>Mctanacine</td>
<td>M. serrata</td>
<td>Celastraceae</td>
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<tr>
<td>5.</td>
<td>Flavonoids</td>
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<td>Ocimum sanctum</td>
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<td>Annona species</td>
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<td>7.</td>
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<td>10.</td>
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<td>Bryostanins</td>
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</table>
FUTURE DIRECTION

Nature is a promising source of active principles against Malignancy growth or cancer cells. Phytochemicals have important biological effects on human cells. Application of plant phytochemicals in malignancy growth or cancer care has boosted the herbal industries to produce large no. of phytochemicals containing natural products with various composition and health claim.

CONCLUSION

On growth medicine chemotherapy and radiation help makes numerous reactions which may be extremely hurtful to human body. Thereabout there may be real prerequisite of elective drug on treat malignancy. Medicinal plant holds number auxiliary metabolites which indicate possibility action against Different ailments. Tumor medicine with metabolites which indicate possibility action against Different growth on treat malignancy. Medicinal plant holds numerous phytochemicals in anticancer therapy. The herbal industries to produce large no. of phytochemicals in anticancer drug discovery. Curr Org Chem 2010; 16 (Suppl 1): S1-81.

REFERENCES

40. Mary Ann Jordan and Leslie Wilson, Microtubules as a Targets for Anticancer Drugs, Nature review Cancer vol 4, Apr 2004
71. Dancey JE Predictive factors for epidermal growth factor receptor inhibitor- the bull’s eye hits the arrow Cancer Cell 5, 2004; 411-415.
76. Harmon AD, Weiss U, Silverton JV. The structure of rohotuka, the main alkaloid of Amoora rohotuka, food and agriculture organization of the united nations1979; 20: 721-724.
How to cite this article:

Source of support: Nil, Conflict of interest: None Declared

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