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A review on natural anticancer herbal drugs

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Abstract

In the study of natural anticancer drugs "Cancer is defined as a large family diseases that involve the abnormal growth with the potential to invade or spread to other parts of body". Is due to abnormal growth cycle of cell. The main principle behind that study of natural anticancer drugs rather than of synthetic product. Synthetic drugs or product having maximum toxicological effect on human body also have maximum side effects. But now a day's synthetic drugs are replaced by herbal drugs because of less side effect. In present study consist of anticancer drugs from natural origin give maximum therapeutic index with less side effects. So some plants from natural source used as natural anticancer plants due to its less side effect. Following plants are used as natural anticancer plants as *Polygonum tictorium* Lour, *Annona muricata* *Dysoxylum binectariferum*, *Borreria hispida* and *Momordica dioica*, Cameroonian.

Keywords: Cancer, source, Natural

Introduction [2, 4, 5, 6, 8, 9, 10].

Definition of Cancer: According to the World Health Organization (2014) and National Cancer Institute (2014), 'Cancer is a large family of diseases that involve abnormal cell growth with the potential to invade or spread to other parts of body'. According to American Cancer Society (2013) and National Cancer Institute (2013), 'A neoplasm or tumour is a group of cells that have undergone unregulated growth, and will often form a mass or lump, but may be distributed diffusely.

History of Cancer: According to Akulapalli Sudhakar (2009), Cancer is the second leading cause of death in the world after cardiovascular diseases. Half of men and one third of women in the United States will develop cancer during their lifetimes. Today, millions of cancer people extend their life due to early identification and treatment. Cancer is not a new disease and has afflicted people throughout the world. The word 'cancer' came from a Greek word 'karkinos' to describe carcinoma tumors by a physician Hippocrates (460-370 BC), but he was not the first to discover this disease. Some of the earliest evidence of human bone cancer was found in mummies in ancient Egypt and in ancient manuscripts dates about 1600 BC. The world's oldest recorded case of breast cancer hails from ancient Egypt in 1500 BC and it was recorded that there was no treatment for the cancer, only palliative treatment. According to inscriptions, surface tumors were surgically removed in a similar manner as they are removed today.

Old Theories about Cancer

- 1. Humoral Theory:** Hippocrates believed that the body contained four humors (body fluids), (a) blood, (b) phlegm, (c) yellow bile and (d) black bile. Any imbalance of these fluids will result in disease and excess of black bile in a particular organ site was thought to cause cancer. This theory of cancer was standard through the Middle Ages for over 1300 years. During this period, autopsies were prohibited for religious reasons, this limiting knowledge about cancer.
- 2. Lymph Theory:** This theory proposed that cancer formation was by fluid called lymph. Life was believed to consist of continuous movement of the fluids like as blood and lymph in the body. The lymph theory was supported in 17th century that tumors grow from lymph constantly thrown out by the blood.
- 3. Blastema Theory:** Muller demonstration that cancer is made up of cells but not with lymph in 1838. His student, Virchow (1821-1902) determined that all cells including cancer cells were derived from other cells.

4. Chronic Irritation Theory: Virchow proposed that chronic irritation was the cause of cancer. Later, their such was showed that cancers metastasize through the spread of malignant cells and not through some unidentified fluid.

5. Trauma Theory: From the late 1800s until the 1920s, cancer was thought to be caused by trauma.

6. Parasite Theory: Till 18th century, scientists believed that cancer was contagious and spreads through parasite.



Fig 1: Causes of Cancer

Name of Natural Anticancer Plants: [7, 17, 35, 28, 18, 40, 37, 30, 26, 19, 21, 14, 31, 22, 1, 34, 32, 20].

	Name of Plant	Part of Plant	Extract Prepared	Pharmacological Effect.
1.	Polygonum tinctorium Lour	Flower, leaves, stems, seeds	Water, Methanol, Ethanol	Inhibitory effects on the proliferation of colon cancer cell line, cervical carcinoma cells, liver carcinoma cells, breast carcinoma cells, laryngeal cancer cell line and gastric cancer cell line
2.	Amnona muricata Graviola)	-	Water, Ethanol	Cytotoxic activity on tumour cell line. In-vitro study on different cell lines
3.	Borreria hispida and Momordica dioica	Seed	Methanol	Where the extract tested against the lung carcinoma, breast carcinoma cell line at various concentration
4.	Cemeroonian medicinal plant	-	Methanol, hexane, ethyl acetate, dichlorimethane, and buthanol	-
5.	Yemeni medicinal plants	-	Methanol, Hot water	It shows cancer cell inhibition
6.	Four Cameroonian medicinal plants	Leaves, barks, roots	Phenols, terpenoids	They were able to reduce in dose dependent manner, the proliferation of cancer
7.	Melius dubia	Leaves	Silver nanoparticles using the plant extract of Melia dubia by using UV-visible, XRD and SEM-EDS.	Silver nanoparticles showed cytotoxicity activity against KB cell line.
8.	Salvia triloba	Oil	-	It shown that oil extract has potent chemopreventive abilities in mouse model of skin carcinogenesis.
9.	Chenopodium quinoa	Leaves	In chemicals	It shows inhibitory effect on prostate cancer cell and on lipoxygenase activity. It shows chemopreventive and anticarcinogenic effect on oxidative stress and ROS-dependent intracellular signaling via synergic effects
10.	Toona sinensis	Leaves	Ethyl acetate	KLR show strongest anticancer activity against human hepatoma HepG2 and human breast cancer MCF-7 cells. QLR, PGG and EG showed relatively weak anticancer activities
11.	Cynodon dactylon	Leaves	Petroleum ether, Dichlorimethane, acetone, methanol or water.	The extract of plant shows anticancer activity.
12.	Litchi chinensis Sonn.	Leaves	Ethyl acetate -soluble	Procyanidin A2 shows higher anticancer activities against human hepatoma HepG2 and human cervical carcinoma Hela cells and poor anticancer activities against human lung cancer A549 and human breast cancer MCF-7 cells.
13.	Neem	Leaves	-	It shows anticancer effect on inhibition of hallmark capabilities of cancer cells and used in chemoprevention and therapy.
14.	Lichens	-	Acetone	Anticancer activity of plant extract was tested against human melanoma and human colon

				carcinoma cell lines using MIT method
15.	Pandanus Amaryllifolius Roxb	-	-	Anticancer activity of plant extract studied on MCF-7 cancer cell line by using MIT assay.
16.	Polygonum Bistorta		Methanol, Water	Human hepatocellular carcinoma cell line.
17.	Hibiscus rosa-Senesis	Leaf	-	Anticancer activity of extract of leaf of plant tested on four human cell line.
18.	Extracts of Microalgae	-	Higher nitrate content solvent	Anticancer activity of extract is studied by using Ehrlich as cite carcinoma cells and human hepatocellular cancer cell line.
19.	Conyza triloba	-	Extract ii (Water : Methanol) Extract iii (Methylene chloride) Extract iv (Methylene chloride: Methanol)	Totally abated all cell lines, except for breast cells.
20.	Clausena lancium (Lour)	-	Ethanol, hexane, ethyl acetate, butanol and water	It shows strong anticancer activities against human gastric carcinoma, human hepatocellular liver carcinoma, human lung adenocarcinoma cancer cell lines, which is higher than cisplatin, which is used as conventional anticancer drug.
21.	Fungi Meyerozyma guilliermondii	Leaves of Rhizophora mucronata	Ethyl acetate	Extract shows higher anticancer activity against Hep2 and human adrenocarcinoma cell lines.
21.	Aristolochiaceae ringens Vahl.	Root	Sulforhodamine B	In- vitro cytotoxicity assay, sarcoma – 180 as cites and solid tumour, and lymphoid leukemia.
22.	Mangrove associated bacterium Bacillus subtilis subsp. Subtilis RG	-	Ethyl acetate	This shows higher cytotoxic activity against human breast adenocarcinoma cells.
23.	Casia auriculata extract and curcumin	Leaf	Ethanol	The extract of plant shows stronger anticancer activity against various types of cancer cells such as human breast carcinoma and human larynx cancer cell line.
24.	Berberis Coreana bark	Bark	Phenolic compounds by using high pressure of sonification	According to study extract of plant shows lower anticancer activity.
25.	Phyllanthus emblica Lon	Fruits	phenolic compounds	The anticancer activity is due to immunomodulatory property.

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