INTRODUCTION
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Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells in different parts of the body. If the spread of cancer cells is not controlled, it results in death. This dreadful disease causes huge mortality in human beings around the world. It is a highly heterogeneous disease arising from multiple tissue types and displaying great genetic diversity [1]. The six hallmarks of cancer cells are: self-sufficiency in growth signals, insensitivity to growth inhibitory signals, evasion of apoptosis, enormous replicative potential, sustained angiogenesis, tissue invasion and metastasis [2]. A large number of external and internal factors that contribute to this disease include: tobacco, chemicals, radiation, infectious organisms, genomic instability, hormonal imbalance, altered immune response and metabolic disorders etc. Cancer is generally classified according to the tissue from which the cancerous cell originates, for example, if cancer develops in the prostate gland it is called as prostate cancer.

Several factors, including location and how the cancerous cells appear under the microscope, determine how cancer is diagnosed. All cancers, however, fall into one of four broad categories.

Carcinoma

Carcinoma is a malignant neoplasm of epithelial origin. It is a tumor that arises in the tissues that line the body’s organs like the nose, the lung, the colon, the penis, breasts, prostrate, urinary bladder, and the urethra etc. About 80% of all cancer cases are carcinomas.

Sarcoma

Sarcomas are tumors that originate in bone, muscle, cartilage, fibrous tissue or fat. Ewing sarcoma (Family of tumors) and Kaposi’s sarcoma are the common types of sarcomas.

Leukemia

Leukemias are cancers of the blood or blood-forming organs. When leukemia develops, the body produces a large number of abnormal blood cells. In most types of leukemia, the abnormal cells are white blood cells. The
leukemia cells usually look different from normal blood cells, and they do not function properly. Leukemia can either be acute or chronic. In acute leukemia the abnormal blood cells are blasts that remain very immature and cannot carry out their normal functions. The number of blasts increases rapidly, thus creating a greater and earlier impact on the victim.

**Lymphomas**

Lymphomas affect the lymphatic system, a network of vessels and nodes that acts as the body’s filter. The lymphatic system distributes nutrients to blood and tissue, it prevents bacteria and other foreign "invaders" from entering the bloodstream. There are over 20 types of lymphoma. Hodgkin’s disease is one type of common lymphoma. All other lymphomas are grouped together and are called non-Hodgkin’s lymphoma. Non-Hodgkin’s lymphoma may occur in a single lymph node, a group of lymph nodes, or in another organ. This type of cancer can spread to almost any part of the body, including the liver, bone marrow, and spleen.

In present times, prostate cancer is the most commonly diagnosed and the second most common cause of deaths in the US, in fact, one in every five men in US is likely to develop prostate cancer in his life time. A man is 33% more likely to develop prostate cancer than an American woman is to get breast cancer. African-American population has a higher incidence of this disease than Caucasians men [3]. Incidence of prostate cancer rises significantly after the age of 50.

Epidemiology of prostate cancer is dominated by three observations: First, racial-ethnic variation associated with prevalence of the disease and mortality. Historically reported to be as much as 80-fold between African Americans and native Japanese and Chinese populations [4]. Second, subclinical prostate cancer at a relatively comparable prevalence, much higher rate, among these same populations; [5] and finally, the strong relationship between prostate cancer incidence and aging [6]. Prostate cancer, in general, is rare in young males but the chances of getting the disease increases with age.
Genetic and environmental factors influence the variability of prostate cancer aggressiveness [7]. The prostate is an androgen-regulated organ [8] and there are some indirect evidences suggesting that altered levels of androgens could contribute in prostate carcinogenesis. For example, when hormonal profiles of healthy men from different ethnic groups were compared it appeared that African American men have much higher level of testosterone as compared to Caucasians and Asian counterparts [9]. Moreover, African American women have testosterone levels that exceed those of Caucasian women by 50% or more in early pregnancy, an exposure that has been hypothesized to permanently alter the "gonadostat," the hypothalamic-pituitary-testicular axis, in African American male offspring relative to Caucasians [10]. African American men during young adulthood also have substantially higher circulating testosterone levels than their Caucasian counterparts (approximately 13 to 15% difference at age 20 years) [10].

Several other indirect lines of evidences point to a role of androgens in pathogenesis of prostate gland. Androgens are involved in the genesis of prostate cancer or progression in most animal models of prostatic adenocarcinoma [11]. Prostate cancers, at least early in their course, are uniformly androgen dependent, and therefore, androgen ablation therapy has been the main method of treating early metastatic prostate cancer [4]. More direct evidence for a role of androgens in prostate carcinogenesis comes from a well-designed prospective study, the Physicians Health Study, which demonstrated that healthy men in the highest quartile of circulating testosterone levels have 2.6 times the likelihood of subsequently developing prostate cancer compared with men in the lowest quartile [12].

Although both genetic control of androgen biosynthesis outside the prostate and transport are of interest but most research to date has centered around androgen activity within prostatic epithelial cells, especially with regard to [13] the androgen receptor (AR) gene responsible both for androgen transport within prostate cells and for transactivation of genes with androgen responsive elements in their promoter regions, [14]. Steroid 5-alpha
reductase gene, which encodes 5-alpha reductase enzyme, is responsible for conversion of testosterone to dihydrotestosterone (DHT) in prostatic cells [15, 16]. This gene encodes a microsomal protein expressed at high levels in androgen-sensitive tissues such as the prostate. Deficiencies in this gene can result in male pseudohermaphroditism, specifically pseudovaginal perineoscrotal hypospadias. There are two distinct isoforms of 5α reductase enzyme viz. types I and II, encoded by two different genes (SRD5A1 and SRD5A2) [17]. They differ with respect to their pH optima in vitro and have differential sensitivity to inhibitors such as finasteride [18]. The endogenous elimination rate of the isozymes corresponds to 45 and 80 h for types I and II enzymes, respectively [19]. It is well accepted that abnormal regulation of androgens may influence prostate cancer development.