

# A Message from the editor-in-chief about progress in cancer prevention and current research

## Editorial

Thanks to the efforts of our Editors, Associate Editors and to the contributing scientists, JPCPR has so far published more than two hundred manuscripts in areas of cancer prevention and current research. The journal is listed in several scientific search engines and hopes to be listed in Google Scholar in the near future. Still, we strive to accomplish more progress.

As the second decade of the 21<sup>st</sup> Century starts to wrap up, our understanding of the complex biological aberrations associated with neoplasia and pre-neoplasia is unfolding at an accelerated phase. We hope that during the current year more is published on the molecular interaction between the external environment and the body regarding neoplastic transformation, progression, metastasis and immunity.

For a long time, epidemiologic studies had suggested that the majority of cancers are environmental in origin. Chronic infections, irradiation, UV light, smoking, high caloric intake and obesity are significant risk factors in cancer. These “external stimuli” and associated oxidative stress produce epigenetic modulation in various tissues affected. Genes associated with proliferation and angiogenesis are activated mostly by hypomethylation and suppressor genes are inactivated.<sup>1</sup> At a systemic level, the immune system is suppressed mainly due to the pro-inflammatory cytokine response associated with these environmental stimuli.<sup>2</sup> The end result is neoplastic transformation, progression and immune evasion.<sup>3</sup>

On the other hand, healthy life-style; exercise, low caloric diet, meditation, acupuncture...etc. stimulate the secretion of endorphin. This “internal” morphine contributes to a better mood and to the stimulation of the immune system especially NK cells and macrophages to attack cancer cells.<sup>4</sup>

Thus, cancer initiation and progression are in fact due to long-term interaction between the “external environment” and the “internal environment” including cytokines, hormones, neurotransmitters and the immune system. These culminate in the process of cellular proliferation and defective repair as well as a receptive microenvironment. A receptive microenvironment of immune cells, fibroblasts, vessels, macrophages and interstitial material supports tumor growth, invasion and metastasis.

Recent years witnessed a significant progress in cancer control with “targeted” therapy, hypomethylating drugs, check-point inhibition and immune modulation. We feel confident that the near future carries even more successes in combining hypomethylating drugs with other treatment modalities, including check-point inhibition.<sup>5</sup>

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Along these topics, results of research, reviews or editorials will be more than welcomed and expedited for publication.

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## Conflicts of interest

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