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A Brief Note on Garcinol and Haematological Malignancies

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Editorial Note

The majority of hematologic malignancies affect the elderly, with the median age for most of these diseases hovering around 65-70 years old. Acute Myeloid Leukemia (AML), which is the most prevalent reason for allogeneic transplantation, is a good example. Adults 50–54 years old have a nearly threefold greater AML incidence than those 20-24 years old, and those 70-74 years old have a 13-fold higher AML incidence than those 20-24 years old. Increased life expectancy in affluent countries has resulted in a societal 'greying,' with an increase in the proportion of elderly persons [1-3]. In 1995, approximately 16 percent of persons were 60 or older, and by 2050, nearly 27 percent will be 60 or older. As a result, we can expect not only an increase in the number of instances of hematologic malignancy among the elderly, but also an increase in the median age of patients with hematologic malignancies.

Cancers of the blood, bone marrow and nodules are known as hematologic malignancies. Different forms of leukaemia (Acute Lymphocytic (ALL), Chronic Lymphocytic (CLL), Acute Myeloid (AML), and Chronic Myeloid (CML)), myeloma, and lymphoma (Hodgkin's and non-(NHL)) Hodgkin's are included in this categorization. Last year, hematologic malignancies accounted for 9% of all newly diagnosed cancers in the United States, with lymphomas (particularly NHLs) being more frequent than leukemias and myeloma. The disease is associated with increasing age, with the exception of ALL and Hodgkin's lymphoma[4-5].

An increasing amount of evidence suggests that the polyisoprenylated benzophenone class of natural polyisoprenylated benzophenones can effectively intervene in hematologic cancers. Garcinol has been shown to decrease the proliferation of histiocytic lymphoma (U937) and leukaemia cell lines such as myelogenous leukaemia (K562), acute promyelocytic leukaemia (NB4), and human promyelocytic leukaemia (HL60) in vitro. Garcinol has a substantial growth inhibitory impact in human leukaemia HL-60 cells, with an IC50 value of 9.42 M.Additionally, garcinol induces apoptosis in a dose and time-dependent manner. Garcinol (20 M) treatment allegedly resulted in a rapid loss of mitochondrial transmembrane potential by releasing mitochondrial cytochrome c into the cytosol, followed by procaspase-9 processing and caspase-3/CPP32 activity in these cells [6-8]. Apoptosis inhibits the growth of other polyisoprenylated benzophenone derivatives derived from the genus Garcinia-isogarcinol and xanthochymol in human leukaemia cell lines. Between the dose ranges of 5-20 M, the impact exhibited against the four leukaemia cell lines tested-U937, K562, NB4, and HL60-displayed exceptional cytotoxicity of the fact that these chemicals appear to have minor toxicity on normal human cells at concentrations lower than 5 mM, yet showing moderate growth inhibition at 10-15 mM, may be of interest. Further research into the cytotoxic potential of these chemicals is required in order to discover new therapeutic medicines that trigger apoptosis in tumour cells. The cytotoxic results of their research provide yet another new insight into G. ovalifolia's historic use as an anticancer plant [9,10]. After determining the causes of cytotoxicity, epigarcinol and isogarcinol may deserve further in vivo studies in order to develop them as an effective natural molecule that might be utilised to treat leukaemia.

References

1. Ennings, William C, Randal S. Baker, Sunshine S. Murray and C. Anthony Howard, et al. Primary Breast Lymphoma: The role of Mastectomy and The Importance of Lymph Node Status. *Ann Surg*. 245(2007):784-789.
2. Wiseman, Charles and Kun T. Liao. Primary Lymphoma of the Breast. *Cancer* 29(1972):1705-1712.
3. Pruthi, Sandhya, Vania K. Stafyla, Stephen W. Phillips and Luis F. Porrata, et al. Primary Mammary (Non-Hodgkin) Lymphoma Presenting as Locally Advanced Breast Cancer. *Mayo Clin Proc* 79(2004):1310-1314.
4. Garrauda O, Heshmatic F, Pozzettoa B, et al. Plasma Therapy Against Infectious Pathogens, as of Yesterday, Today and Tomorrow. *Transfus Clin Biol.* 23(2016):39-44.
5. Joyner, Michael J, Rickey E Carter, Jonathon W Senefeld and Stephen A Klassen, et al. Convalescent Plasma Antibody Levels and the Risk of Death from Covid-19. *N Engl J Med* 384(2021):1015-27.
6. Libster, Romina, Gonzalo Pérez Marc, Diego Wappner and Silvina Coviell,et al. Early High-Titer Plasma Therapy to Prevent Severe Covid-19 in Older Adults. *N Engl J Med* 384(2021):610-618.
7. Schmidt, Michael, Sebastian Hoehl, Annemarie Berger and Heinz Zeichhard, et al. Novel Multiple Swab Method Enables High Efficiency in SARS-CoV-2 Screenings without Loss of Sensitivity for Screening of a Complete Population. *Transfusion.* 60(2020): 2441-2447.

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8. Weisblum, Yiska, Fabian Schmidt, Fengwen Zhang and Justin DaSilva, et al. Escape from Neutralizing Antibodies by SARS-CoV-2 Spike Protein Variants. *eLife* 9(2020):e61312.
9. Domchek, Susan M, Jonathan L Hecht, Mark D Fleming and Geraldine S Pinkus, et al. Lymphomas of the Breast. *Cancer* 94(2002):6-13.
10. Raj, Sean D, Mahmud Shurafa, Zeeshan Shah and Karuna M. Raj, et al. Primary and Secondary Breast Lymphoma: Clinical, Pathologic, and Multimodality Imaging Review. *Radiographics* 2019;39(3): 610-625.

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