

EDITORIAL

Bioactive compounds in chronic and infectious disease

As per WHO, “Chronic diseases broadly include heart disease, cancer, chronic lung disease, stroke, Alzheimer’s disease, diabetes, and chronic kidney disease.” It is stated that 60% of the adults in the united states (US) have one chronic disease and 40% have a comorbidity of two or more chronic diseases (CDC, 2023). In India, 21% of the elder have at least one chronic disease of which, 68% is accounted for hypertension and diabetes mellitus (Jana & Chattopadhyay, 2022).

Infectious diseases comprise various pathogenic microorganisms such as bacteria, viruses, or fungi which directly or indirectly spread from one person to another. As per WHO, it can be divided into three categories: one that has a higher mortality rate; second with more burden in the form of disabilities; and lastly the diseases that are unknown by nature, especially the one whose mechanism of spreading is known (WHO, 2023a). Examples include the most recent monkeypox and COVID-19 and also include diseases such as chickenpox, HIV, influenza, malaria, polio, pneumonia, tetanus, tuberculosis, and many more (Roberts, 2019).

When the occurrence of such incidence is very high, the means of management are numerous. In the majority of cases, synthetic drug-based therapy is been incorporated which holds numerous adverse events (Brahmer et al., 2018). Multidrug-resistant (MDR) pathogen infections pose a major health risk to those who are immunosuppressed, have cancer, or are in critical care units. When antimicrobial drug delivery development does not outrage the pace of resistance, the world has now turned back to traditional means (Saha & Sarkar, 2021).

Bioactive is the part of a molecule, or the molecule itself which imparts therapeutic action. Around 80% of people who live in developing countries, according to estimates from the World Health Organization, nearly exclusively utilize herbal remedies. This indicates that 3,330 million individuals frequently utilize herbal remedies (WHO, 2023b). Herbal medicines have several benefits over synthetic ones. First off, it aids in the deduction of negative effects, especially those brought on by other medicinal agents. When used as prescribed, the majority of herbal medication preparations have no negative effects of their own. Natural medication treatments are less expensive than allopathic medicinal products (Welz et al., 2018). It is also true that more than 25% of drugs that are prescribed at the present moment are derived from plants (Benzie & Wachtel-Galor, 2011). Herbal medicines are more frequently utilized for chronic illnesses rather than those that are life-threatening and to promote good health. Traditional remedies, however, become more popular when modern medicine falls short in curing a condition, as is the case with cancers with advanced stages and newly developing infectious illnesses. Traditional treatments are also frequently seen as being organic, safe, and non-toxic (Cohen & Ernst, 2010).



Herbal medicines’ enormous market size and potential health benefits contribute to balancing the fields enormous research requirements. It is necessary to do research to evaluate the quality, safety, molecular effects, and therapeutic efficacy of the numerous herbs that are often utilized. It is now feasible to determine the ultimate authenticity and quality of herbal products by applying chemical fingerprinting and genomic testing techniques with hyphenated testing systems. This special issue places particular emphasis on the bioactive ingredients that can be used in treatment techniques for chronic and inflammatory diseases (Tilburt, 2008).

One can target various molecules such as millet, vitamins such as vitamin C, vitamin D, Vitamin E, Vitamin P, omega-3 fatty acids, organic acids, nucleosides and nucleotides, curcumin, antioxidants such as lycopene, tomato, various fruits and many more (Michalak, 2022). The author can also target novel extracted compounds such as propolis, resveratrol, or coenzyme Q10 (Chavda et al., 2023). The author can even emphasize diseases condition such as inflammation, cancer, respiratory disorders, epigenetic regulation, heart disease, stroke, Alzheimer’s, diabetes, cataracts, etc. Mostly considered in the perfume industry, but now well-studied details on essentials can also be a point of discussion (Sears & Genuis, 2012).

We encourage you to explore this niche sector which holds great potential with itself and would be a crucial part of management tactics shortly.

CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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