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Body Redox Status, Antimicrobial Resistance And Alternative Medicines

An Article

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Today the control of microbial action and redox status within the human body through food and food components has become the most important field of research. An imbalance between reactive oxygen species (ROS) formation and the capacity of antioxidant defenses has been found to be resulting in the occurrence of oxidative stress. This imbalance instigate chronic diseases such as neurodegenerative ageing, as well as cancer and cardiovascular diseases by damaging DNA, proteins and lipids. Moreover, New resistance mechanisms of microorganisms against antimicrobials are emerging and spreading globally. In addition, these antimicrobials might possess an adverse effects in the body, which include hypersensitivity, immunosuppressant and allergic reactions. Thereby threatening our ability to treat common infectious diseases, resulting in prolonged illness, disability, and death.

These situations forced scientists to explore for new anti-microbial and therapeutic antioxidant efficacious substances from various sources, such as medicinal plants.

Natural antioxidants are found exogenously in dietary sources, like fruits, vegetables Spices and herbs (Vitamin C, Vitamin E, Vitamin A and various polyphenols including flavonoids) and endogenously (glutathione peroxidase, catalase, and superoxide dismutase (SOD)) in tissues.

All antioxidants are working in concert as a team, the "antioxidant system", responsible for prevention of the damaging effects of free radicals and toxic products of their metabolism. And an antioxidant was

defined as: "any substance that delays, prevents or removes oxidative damage to a target molecule". The cumulative and synergistic activities of the bioactive molecules present in plant food are responsible for their enhanced antioxidant properties.

Drug resistance is caused by the misuse and overuse of antibiotics, which encourages bacteria to develop new ways to overcome their effects. The development of Antimicrobial Resistance (AMR) in bacteria is neither an unexpected nor a new phenomenon. Since the time of the first antibiotics, penicillin, discovery by Alexander Fleming in 1928 and was employed in the 1940s; resistance was first observed and the framework for understanding this phenomenon was already in place.

With an increase in antibiotic resistance, herbal drugs alternatively can be used in combination with antibiotics with enhanced activity against bacterial infection. It was suggested that herbs may inactivate/destroy enzymes that is produced by bacteria to degrade antibiotics, herbal drugs may inhibit the action of efflux pumps making bacteria unable to remove antibiotics from their body, etc.

One of the world widely used plants is licorice (*Glycyrrhiza glabra*) Which was proven to possess many beneficial health effects such as: Antioxidant, Antiviral, antifungal, antibacterial, and anti-malarial effects. It was also proven that it possesses immunostimulatory**,** antihyper-glycemic, Hepato-protective and anticoagulant activity.

Thereby, it is almost appropriate to presume that natural drug sources or alternative medicines; with their variety of active compounds which by certain synergism works its magic in showing multiple health benefits that reduces: the use of synthetic drugs and side effects and toxicities on

the long term, reducing time and effort for looking for more than one drug to treat more than one symptom. Of course not to mention the possibilities of the interactions among the drugs themselves and among drugs with any consumed substances (foods and drinks). Natural food enhance immunity and help fight infectious diseases. By using natural alternative medicines, we reduce the rate of misusing synthetic antibiotics in unnecessary conditions such as viral infections (flu). This help reduce the rate of antimicrobial resistance.