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The antibacterial properties found in the Brassica Oleracea leaves. A Review.

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ABSTRACT : The antimicrobial activities have been searched previously on plant infection control and for food preservation. Current research have studied the mode of action of ITCs attracted attention of several researchers. The objective of this review is to discuss the current knowledge and hypothesis for the antibacterial effect of the leaves of the Brassica oleracea plant. (ITCs) of organic extract of leaves of the Brassica oleracea plant on some vegetative microorganism like Candida albicans, Staphylococcus spp., Salmonella spp., Klebsiellaspp., Bacillus spp. and yeast.

Keys words: Brassica oleracea plant, antibacterial properties

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I. INTRODUCTION

Brassica oleracea is one the most vegetables consumed in the world and is found in local markets (Kusznierewicz et al., 2008). It is allied to the family of Brassicaceae (or Cruciferaceae) along with Collards, Brussels sprouts, Broccoli, Cauliflower and Kale (Jaiswal et al., 2011).

The above vegetable content an abundant phytochemicals such as flavonoids and glucosinolates and their hydrolysis products. It has a good proprieties that promote health and plays a big role in preventing against different conditions such us cancer, cancer, atherosclerosis, nephritis and diabetes mellitus (Taveira et al., 2009).

Moon (2011) in their study from a crude methanol extract prepared from fresh broccoli sprouts was extracted with hexane, chloroform, ethyl acetate, and butanol sequentially. Those substances had higher antibacterial actives us demonstrated in the same study in different dilutions used against the Helicobacter pylori.

The chloroform extract has shown greatest inhibition zones (>5 cm) against Helicobacter pylori s, followed by the hexane extract (5.03 cm), the ethyl acetate extract (4.90 cm), the botanical extract (3.10 cm), and the crude methanol extract (2.80 cm), however the residual water fraction did not demonstrate any inhibition zone (Moon et al., 2011). The priorities antibacterial were found among 18 sulforaphane and related compounds synthesized (6 amines, 6 isothiocyanates, and 6 nitriles), 2 amines, 6 isothiocyanates, and 1 Nitrile exhibited >5 cm inhibitory zones for H. pylori strain.

Researchers had conducted several studies to understand the antibacterial activity of cabbage juice that were observed with the glucosinolates degradation by-products found in the juice (Saeed, S. and P. Tariq, 2006; Stoewsand, G.S, 1995). The antibiotic and antifungal activity against a large number of bacteria, and used in the treatment of lung diseases (Chopra, D. and D. Simon, D, 2000, Dutta et al., 1998).

These researches have stimulated research to revisit the potential of plant products of different ingredients in the processing of other foods (Sebranek, J.G. and J. Bacus, 2007 and Honikel, 2008).

The purpose of this review article is to discuss the current knowledge and hypothesis for the antibacterial effect of the leaves of the Brassica oleracea plant.

II. METHODS

We conducted review articles using PuBmed, embase, Google scholar and cochrane.
The MesH word used were Brassica oleracea plant, antibacterial properties .

III. RESULTS AND DISCUSSION

ANTIMICROBIAL ACTIVITY OF THE PLANT EXTRACTS OF *BRASSICA OLERACEA* AGAINST SELECTED MICROBES.

Several studies were conducted by Swati et al., (2012) to discover the antimicrobial activity of the plant extract. Different concentration was used to the antimicrobial activity against three pathogenic microorganisms such as Aspergillus fumifatus, Citrobacter diversions and Klebsiella pneumonia. The maximum zone of inhibition was obtained for Aspergillus fumigatus and Klebsiella pneumonia at a concentration of 200µg/200µl. While Klebsiella pneumonia exhibited good sensitivity against both the concentrations and Citrobacter divergence showed medium sensitivity.

From the above studies, it is concluded that the traditional plants may represent new sources of anti-microbial with stable, biologically active components that can establish a scientific base for the use of plants in modern medicine.

Phytochemical analysis has studied the antimicrobial activities of the Brassica oleracea worldwide and the following substances were responsible for these activities against infections such as flavonoids, glycosides, saponins, steroids, terpenoids and alkaloids (Sibi et al., 2013).

The evidences in the literature have shown the bioactivity data obtained from the current study using the tested extracts of the plant demonstrated the potential to inhibit bacteria and fungi in the laboratory (Suganya. D et al,. 2016).

The Laboratory sensitvity have shown *Pseudomonas aeruginosa* exhibited more inhibitory activity which represents the role of phytoconstituents towards the action of permeability on peptidoglycon layer.

The acetone extract component have demonstrate ability to create an acidity environment that lead to the disruption of the bacterial and fungal cell membrane. That made it to have a maximum antibacterial activity (Suganya. D et al,. 2016)..

Phytochemical agents act as antimicrobial agent by inhibiting the extracellular enzyme acting on the substrates required for microbial growth or by inhibiting oxidative phosphorylation of microbial metabolism.

Several studies conducted found that active phytocomponents of *Brassica oleracea* had an antimicrobial activity against *Aspergillus fumifatus, Citrobacter diversens* and *Klebsiella pneumonia (*Swati Paul, 2012).

IV. CONCLUSION

ConclusionTraditional plants such as active phytocomponents of Brassica oleracea is found to have new sources of anti-microbial with the same proprieties that can be used in different medical interventions.However, further studies need to be conducted to assess the proprieties of the botanical preparation of those medicinal plants that can be extended in the field of pharmacology.

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