Original Article

A Review Article On Antidiabetic And Antibacterial Activities Of Carvacrol Derivatives, Some Medicinal Plant And Bolivian Nutrient Rich Vegetation

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Abstract

Diabetes mellitus is chronic metabolic disorder that is fast growing global complication with severe health and economic consequences. Approximately 65% people in world in 2011 was estimated that suffered from this problem. This problem in the world need some researches in nutrient rich plant that show their antidiabetic effect and antibiotic effect of respectively these plant are Psidium guajava,Lupinius mutabitis,Amaranthus caudatus,S.aureus . Nutrient plant are important source of therapies due to their tradionally acceptance. The main aim of this study is to study nutrient rich plants as antidiabetic and antibectarial effect using animal model in vitro infection. Firstly, Screening of glycemia-reducing effect performed in albino mice result was the ethanolic extract of Psidium guajava,Lupinus mutabitis,Amaranthus caudatus reduce the glycemia and maintain tolerance. Moreover in vitro insulin screening in pancreatic islet of mice was stimulated by Amaranthus caudates. Evalution of antidiabetic effect using Goto-kakizaki type 2 diabetic rates for Amaranthus caudatus that improve the glucose tolerance and increase serum insulin level. Since there is worldwide enhancement of antibiotic resistance we researchers are trying to sought out this problem throught investigation on possible effect of medicinal plant for the treatment in Gram positive S.aureus and methicillin resistance S.cureus through methanolic extract of C.asiatica using disc diffusion method.

Conclusion: The Amaranthus caudates,S.aureus,C.asiatica ,Lupinius and Psidium guajava these are possess safe significant antdiabetic and antibiotic effect

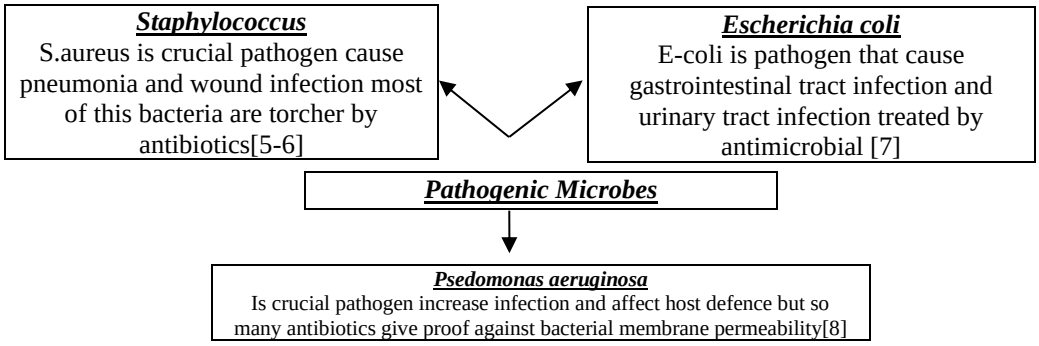
Key words: Antdiabetic ,Antibiotic effect, Amaranthus caudates, Goto-kakizaki, Medicinal plant.

INTRODUCTION

Enthusiasm in naturally appear substance as antibacterial and antidiabetic ingrident have enhanced as the acceptance of natural agent, natural ingredients mainly commenced from the 3 sources such as first is Herbal or medicinal plant, second is animal and third is micro-organism[1-2]. Antibiotics are substance that are used to inhibit or kill the bacterial growth. Resistance of antibiotics is an enhancing activity in morden medicine and produce as a significant threat to health of public [3].

Bacterial growth inhibit by antibiotics Antibiotics are important in bacterial remedy [4].Many antibiotics inhibit the bacterial cell wall movement formation such antibiotics are Erythromycin, Chloramphenicol, Tetracycline of bacteria, Ciprofloxacin, Rifampin are interrupt membrane permeability of microbes.

Pathogenic microbes of human



In general, bacteria possess intrinsic or innate resistance to drug [9-10].The major conern is drug resistance because so many pathogens related to serious infection that is staphylococcus aureus with its antibiotics resistance as compare than another pathogens.

There are so many plant derivatives medicinal plant and bolivian nutrient rich plant show antibacterial effect such as **Puerarial radix, Sulphonamise dvt of carvacrol, Pereskia grandifolia, Curcuma aeruginosa Roxb, Zingibes officinate, Anacardium occidentale and C. asiatica.**

Antibacterial activity of medicinal plants, some plant derivatives and bolivian nutrient rich plant. There are so many studies are found that give evidence about antibacterial activity.

Study on antimicrobial activity of crude water soluble arrowroot tea extract (Puerarial radix) against E-coli, monocytogens, staphy,aureus on bacterial cell morphology using transmits electronic microscopy(TEM)[11]. In this study crude water soluble arrowroot tea extract 0.62% concentration that indicate good antibacterial effect on both Gram- ve and Gram +ve bacteria[12-13].

Study on a series of some sulphonamide dvt of carvacrol showed antibacterial activity on S.aureus stains [14].

***Microorganism*:-** Evatution done through staphylococcus aureus strain culture collection bby colony morphology gram staining using catalast testing for DNase activity and agar screening for antibacterial sensitivity.

***Antimicrobial sensitivity testing (AST)*:-** For various S.aureus stains were studied by disk diffusion using muller hinton agar plate through incubation for antimicrobial sensitivity[15]

Worldwide morbidity & mortality are cause by aruous infection disease [16-17].tudy on methanolic extract of C.asiastica give result antibacterial activity [18].Various medicinational plants are used as folk medicine in bacterial infection disease like bronchitis,urinary tract infection, parasitic disease moreover, antibacterial are miracllye reduce various infection, near about 3103 medicinal plants are used in Mexican traditional which used to cure many of infection such as Gram +ve, Gram –ve (E-coli,Staphylococcus aureus)[19].Natural product show many function that useful in biological activities[20].Some study report on a secreening of many methanolic extract and many herbal plant used in malaysia for antibacterial activity against both on Gram negative and Gram positive[21].The medicinal plants show antimicrobial activity these are plant are **Pereskea grandifolia belong Cactaceae family and Curcuma aerginosa Roxb and Zingiber officinate belong Zingiberaceae family[22].**

Another one study on raw extract from Nigerian plant **Anacardium occidentale** and **Angeiossus schimperi** use traditionally in the treatment of bacterial infection using hole –plate diffusion method many extractive material used againt Gram +ve bacteria. These plant extract were used such as Angeiossus schimperi(A .S) and Anacardium occidentale these are possess excellent antibacterialactivity against E-Coli and Pseudomonas aeruginosa[23].

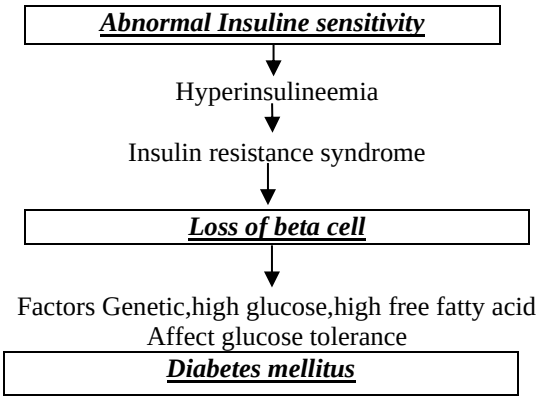
Antidiabetic medicinal plant

Many of diabetes mellitus (DM) report cases has been enhancing globally by current year **World Health Organization** estimated 2.8% people suffered from diabetes mellitus. Diabetes mellitus affect autoimmune disease that distract the insulin production by beta cell and fail to secrete insulin, Obesity, hyperlipidemia, hypertension and metabolic disorder are highly risk factor for cardiovascular disease [24].By the year 2040 near about 645 million people will be reach this figure and will be suffered by diabetes this estimation given by **International diabetes federation** (IDF)[25].Diabetes is develops when pancreatic bata cell destroys by body immune system,some organs are involve in Diabetes include the pancreatic beta cell ,a cell,liver ,kidney,small intestine and adipose tissue[26].

There are some various plant extract and bolivian nutrient rich plant show antidiabetic activity such as Psidium guajava linn,Lupinus mutabilis and Amaranthus Caudates.

Psidium guajava linn is a traditional plant in subtropical region and possess pharmacological activites such as leaf extract of guajava is used traditionally for the treatment of diabetes.Extract of guava leaf inhibit alpha-glucosidase enzyme and reduce blood glucose elevation and also improve hyperglycemia ,hypercholesterolemia condition[27]

Mechanism of diabetes mellitus



On the study of neutaceutical rich plants are traditionally use such as Lupinus Mutabilus (LM) is traditional bolivian food possess neutraceutical that reducing blood glucose level Lupinus Mutabilus extract for antidiabetic action using goto-kakinaki rats provide evidane of antideabetic effect.[28].

Mechanism of L.M dependent that secrets insulin

L.M stimulate release of insuline And islet were cure by L.M that stoping the adenosine triphosphate(ATP) sensation on potassium channel that affect membrane depolarization ,open K-ATP channel through this islet were incubated in KRB buffer 3.2mMand 15.3mM glucose for treatment[29] Moreover in vitro insuline secretion in pancreatic islet of mice was stimulated by Amaranthus Caudates,Chenopodium quinoa.Antidiabetic action evaluation by using Gota-Kaki type 2 diabetes mellitus for Amaranthus Caudatus that improve the glucose tolerance and increase serum insulin level.[30]

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