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EVALUATION OF THE ACTIVITY OF NADIAH HERBAL FORMULA AGAINST NEISSERIA GONORRHEA

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ABSTRACT

Objective: The *gonorrhea* infection is a major problem recently, and its resistance against different medications. Therefor the objective of this study was conducted to evaluation the activity of nadiah herbal against *Neisseria gonorrhoea*. Material and methods: Plant material were extracted using soxhlet apparatus with ethanol (90% 200ml) lillexhaustion. *N. gonorrhea* was isolated from 40 patients with acute gonococcal, the inoculated culture plates were incubated at 36Ċin a moist atmosphere containing 5% Co_2 for 24 to 48 hours. Susceptibity testing of *N. gonorrhea* to the extract was done by the same methods as used for testing antibiotics. **Results:** The results of the inhibition of *N. gonorrhea* by various extract in this study such as petroleum ether, chloroform, actone, hexane and water were referred to the aqueous extract of single plants was gave 7 and 10 mm as inhibition percentage while nadiah formula extract was gave a high percentage of inhibition and reached to 24 mm.

KEYWORDS: *Neisseria gonorrhoea*.

INTRODUCTION

Gonorrhea is one of the common sexually transmitted diseases in developing countries and a global health problem.[1] It has for – reaching social and economic consquences. control of gonococci infection is a difficult and complex issue.[2] Several authors have reported the emergence of strains resistant to different antibiotics.[3] The development of antibiotic

resistance by *N. gonorrhea* may involve both chromosomal and plasmid mediated mechanisms and for some antibiotics, both may be implicated.[4] The problem of increasing resistance is further compounded both by wide dissemination of resistant clones and emergence of strains with novel resistance mechanisms.

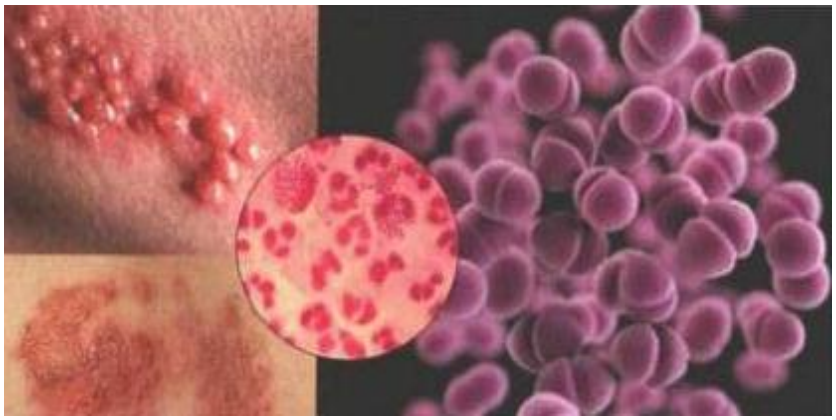

Fig. 1: The increasing of resistance has resulted in reduced effectiveness of penicillin and tetracycline and increased cost's of treatment when quinolones and third generation cephalosporin's are used.

In view of all these fact's, there is an urgent need for alternative antimicrobial substances which are cheap, readily available for the population and have minimum side effects. In recent years multiple drug resistance in human pathogenic microorganism have developed due to indiscriminate use of commercial antimicrobial drugs commonly used in the treatment of infectious disease.[5] The development of antibiotic resistance is multifactorial, including the specific nature of the relationship of bacteria to antibiotics the usage of antibacterial agent, host characteristics and environmental factors. this situation has forced scientists to search for new antimicrobial substances from various sources as novel antimicrobial chemotherapeutic agent.[6] The cost of production of synthetic drugs is also high and they produce adverse effects compared to plant derived drugs. Hence much attention has been paid recently to the biologically active compounds derived from plant used in herbal medicine, for these reasons, the medicinal plants are important substances for the study of their traditional uses through the verification of pharmacological effects and can be natural composite sources that act as new anti-infections agents.The nadiah herbal formal which used for treatment of the human papilloma virus HPV. infection and have approval as *anti-candida*albicans agent from industrial research institute (IRI) and patient for human papilloma virus (HPV) from Abdualaziz king city for researches and technique.

This formula which included three components were *Aloevera* jell extract, Chamephoramolmol gum extract with sea salt. This study was carried out to evaluation its activity against *Neisseria gonorrhoea*.

MATERIAL AND METHOD

Preparation of plant extract: *Handerd gram of each plant Aloe gel and myrrha gum was used for extraction by each different solvents were petroleum ether, acetone, hexane and water by soxhlet apparatus for 4 hrs.

Then each extract filtered through whatman NO.1 filter paper and their crude extract were evaporated in a water bath to give gummy solid residue. The residue was dissolved in Dimethyl sulphoxide.[7]

***N. gonorrhea* clinical Isolates:** *N. gonorrhea* was isolated from 40 patients with acute gonococci urethritis attending the central laprotary of public health of ministry of health in Iraq, urethral swabs were inoculated onto chocolate ager ((Columbia agar base (Himedia. India) and sheep blood)) and saponin-lysed blood agar with vancomycin, Colistin, nystatin. and trimethoprim (VCNT) supplement (Hi media, India). The inoculated culture plates were incubated at 36Ċin a moist atmosphere containing 5% CO_2 (Candle extinction jar) for 24 to 48 hours. These consecutive clinical isolated were identified on the basis of colony morphology, gram stationing, oxidase superoxol and rapid carbohydrate utilization tests.

Testing the activity of plant extracts: Susceptibity testing of *N. gonorrhea* to the extracts was done by the same method as used for testing antibiotics, except that whatman filter paper dises of – mm diameter, impregnated with the required concentration of each extract, was used instead of antibiotics discs DMF or autocalved, distilled water impregnated discs were used as control for extracts dissolved in DMF or. Water, respectively the activity of the plant extracts against *N. gonorrhea* was measured, indicated by clear zones of inhibition.[8]

RESULTS AND DISCUSSIONS

The inhibition of *N. gonorrhea* by extract: The various extracts such as petroleum ether chloroform, acetone, hexane and water of*C. molmol*and *A-vera* were tested against *N. gonorrhea* for presented in table (1).

Table. (1): Antigonococcal activity of *A-Vera, C.molmol* and Nadiah herbal formula by well diffusion method (Diameter of zone in mm).

strain	Plant types	Type of extract				water
		Petroleum ether	Chloroform	Acetone	Hexane	
N. gonorrhoa	*A. Vera*	-	-	-	7	18
	C. molmol	-	-	-	10	16
	Nadiah formula	5	6	5	6	24

In our study aqueous extract of the *A-Vera* and *C.molmol*showed 18 and 16 mm as percentage of inhibition percentage while the nadia formula was gave a highper percentage was Reached to 24 mm. The petroleum ether, chloroform, and acetone extracts were gave the inhibition percentage reached to 5 and 6 mm and 5 respectively (Table 1). The activity of aqueous extract of nadiah formula maybe belong to active or bioactive compounds of components of this formula such (poly seccharides of aloe gel and monosaccharide in aloe gel (mannose – 6 – phosphate.[9] Also there are some publications about antiviral properties of different kinds of plant extracts such as *A-vera* especially investigation about the antiviral activity of its anthroqninones[10] The specific chemical composition of *A-vera* have more activity are aloe – emoding, aloetic acid, enthronol, harbaloin, isobarbalion, emodin, ester of cinnamic acid and salicylic acid[11], The activity of this formula was be belong to active compounds of myrrha extract such as essential oil which comprised most notably of eugenol and terpenoids, terpenoids have a reputation as potent healers, potentially because of their antioxidant capabilities.[12] More activity of this formula maybe belong to active compounds of solid extract of myrrh such as sesquiterpeneswhich included atractylone, 2-0 methly – 8, 12-epoxygermacra – 1 (10) – 4 7,11 – tetraene, aristolone, germacrne also myrrha contained triterpenes constituting viminalol& - amyrin, d-ammareneediol and ursan -12-en- 3,11-dione.[13] The sea salt is arich of menirals such as potassium sulphate, claims chloride magnisamcarbontes with sodium chloride this compounds (solar sea salts) as antioxidant activity in vitro studies and in vivo. This study was agrremented with other studies of antimicrobial activity of *A-vera* extract which showed anti-bacterial activity a giants the Gram – ve bacteria (seudomonas a eruginosa, Kelbsiellapneumonniae, e.coli and salmonella typhimurium) and*C. albicans*[14] Also with this result. werecompared with other study was showed more extract antimicrobial activity and anti-inflammatory of myrrha.[15]

CONCLUSIONS

Based on the results it can be concluded that the *A-vera* plant, *C- molmol* plants extracts have activity against *N. gonorrhea* while the Nadiah formula have great potential as

antigonococcal components against *N. gonorrhea* and can be used in treatment of infectious diseases caused by resistant microorganisms.

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