Study the anti-Bacterial &Fungal activity of Junchus Arabica on Some Pathogenic isolates *In vitro*

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Abstract:

To demonstrate and investigate in vitro the activity of antibacterial and fungal of fao junchus Arabica fresh and dry seeds obtained from different areas of Basrah especially against (5) isolates of pathogenic bacteria aerobic Escherichia coli, Pseudomonas aeruginosa klebsiella spp., Staphylococcus aureus and anaerobic bacteria Propionipionibacterium acnes isolated from different skin diseases as well as antifungal activity against (5) Tinea corporis, Tinea pedis, Tinea unquium, Candida albicans, Tinea cruris. Green and dry seeds showed high activity effect of both antibacterial and fungal.

Introduction

In the past peoples as its innate information were used many plant source as treatment of some diseases or others complication of this diseases, but they were not know the complication or side effects and not able to demonstrated this plants drugs, the aims of using this plant materials and its derivations was to recovery or healing the patients and fifty percent of pharmaceuticals are derived from the plants. All of plant are useful and rich in wide variety of secondary metabolites; such as tannins, terpenoids, alkaloid, and flavonoids, and have applied as antibacterial or antivirus an aqueous prepation of this plant is used as a cosmetic and medicine.

Materials and Methods

Green seed and dry seeds of Junchus Arabica had obtained from different regions of Basrah city. All of sample of this plant culture in Basrah especially in different region samples of were crushed with a pestle and mortar 50g of seeds added to 250 mL ethanol for three days with intermittent agitation. The mixture was filtered and crude extract was collected and then distilled at 37°C using in an oven. The crude plant extract was diluted into (25, 12.5, 6.35, 3.12, 1.56, 0.78 mL) and finally 0.39 mL by using distilled water (sterile). Ten
different pathogenic isolates are used to test antibacterio-fungal activity of the seeds sample, also three standards bacteria were staphylococcus aureus, Escherichia Coli and pseudomonas aeruginosa.

This isolates were obtained from patient attending Basrah Hospitals. Colony of each standards microorganism was emulsified in 4 ml distilled water :yielding about 1x10 and used swab agar plates of diagnostic sensitivity test well of 5mm in diameter were made and 50 ml of each well plant dilution was put into each well with micropipette, each dilution was tested in duplicate. The plates were left at 37°C in incubator for 24 hours, inhibitor zones sized in millimeters recorded ,tetracycline and ciprofloxacin were included as control.

Results
Green and dry seed of the Junchus Arabica sample demonstrated antibacterial and antifungal. Activity against 10 different skin isolates microorganisms. Activity against this isolates were similar effect for all isolates . And dry seeds showed high level of activity for all 10 isolates (table 1) In figure 1 anti-staphylococcus activity of green seeds compared with dry henna and growth inhibitory activity up to a concentration 12.5% with inhibitory zone 35mm and, others bacteria and fungal isolates show also highest activity like streptococcus pyogenes and high effective with other pathogenic isolates, table 1. With green and Junchus Arabica plant

Table 1:Antibacteial and antifungal activity of Junchus Arabica at 50% concentration and 45mm inhabitation zone.

<table>
<thead>
<tr>
<th>No.of isolates of both bacteria and fungus</th>
<th>Junchus Arabica extract</th>
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<tbody>
<tr>
<td></td>
<td>Green seeds</td>
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<tr>
<td>S.aureus</td>
<td>***</td>
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<tr>
<td>E.Coli</td>
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<td>Klebsiella sp.</td>
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<td>S.pyogenes</td>
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<td>P.acnes</td>
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<td>T.unguium</td>
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<td>T.cruris</td>
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<td>T.pedis</td>
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<td>T.corporis</td>
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<td>C.albicans</td>
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***=45mm zone of inhibition
Figure 1: anti – *Staphylococcus aureus* activity of the Junchus arabica GJA, DGA ( G = green (fresh), D = Dry ).

**Discussion**

Quinones are present in Junchus in Arabica, and these aromatic rings with two groups of keton substitutions, Its ubiquitous in nature and are characterized by this properties .These compounds being brown colored, and similar to others plants, play in the melanin synthesis pathway inhuman skin which occurs simply through oxidation and reduction ,also presence of som enzyme like polyphenoloxidases and with nucleophil amino acid in proteins , leading to in activation of the protein and loss of function,Quinones may be inhibited cell growth in culture.

Junchus Arabica are high effective against the spectrum of bacteria and fungus as well as candida albicans which are demonstrated in this project or aim of study ,it may me that this plant contains active ingredients which made Junchus Arabica highest effective antimicrobial agents.The most effective of Junchus Arabica is demonstrated by the inhibitory effect of all dilution on *staphylococcus aureus* and others pathogenic isolates Junchus Arabica contain flavnoids, quinones and phenol which have antimicrobial activity , we have concluded that Junchus Arabica are high had antimicrobial activity in dual spectrum again bacteria, and Dermophytes as well as candida albicans. This extracted of Junchus Arabica the first done to demonstrated the activity of this plant against many bacterial and fungal isolates.

**References**