بسم الله الرحمن الرحيم
شبكة المعلومات الجامعية
tوثيق الإلكتروني وال mikrovilam
جامعة عين شمس
tوثيق الإلكتروني وال mikrofilm
قسم
نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
على هذه الأقراص المدمجة قد أعدت دون أي تغييرات

يجب أن
تحفظ هذه الأقراص المدمجة بعيدا عن الغبار
بالرسالة صفحات
لم ترد بالأصل
بعض الوثائق الأصلية تالفة
Bactericidal Effect of Helium-Neon Laser on Photosensitized Staphylococcus aureus in Vitro

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A Thesis Submitted to Department of Basic Sciences in Partial Fulfillment of the Requirements for Master Degree in Physical Therapy

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صدق الله العذام

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Abstract

Background: Many studies had shown that low power He-Ne laser therapy was effective as bactericidal modality, while others did not found so based on this conflicting research, the use of He-Ne laser as bactericidal modality with direct effect is still controversial. The Purpose of this research was to study the bactericidal effect of low power He-Ne laser on photosensitized Staphylococcus aureus bacteria in vitro. Methods Staphylococcus aureus bacteria were used in this study, One hundred samples were used (86 standard strains (ATCC25923) and 14 isolated strains in Microbiology and Immunology Department), 15 mW He-Ne gas laser was used in this study with wavelength 632.8 nm. Toludine Blue O (TBO) (C152040) was utilized as photosensitizing agent in this study. Results: of these study showed negative effect of He-Ne laser on 98 plates of Staphylococcus aureus bacteria out of one hundred plates. Discussion: This results has been attributed to susceptibility of Staphylococcus aureus bacteria strain that has been utilized in this current study, in addition the results would have been expected to be more efficient if Gallium Aluminum Phosphate laser has been utilized instead of He-Ne laser in the current study because of its reported bactericidal effect, which is more powerful than He-Ne laser, however He-Ne laser has been utilized because of its availability in faculty of physical therapy while Ga-Al-P laser device has not been available for these research work. Conclusion: within limitation of these study 15mW He-Ne laser has no bactericidal effect on photosensitized Staphylococcus aureus bacteria.

Key Words: Laser, Staphylococcus Aureus Bacteria, Wound Care
Acceptance

I have examined the final copy of this thesis for form and content and recommended that it will be accepted in partial fulfillment of the requirements for the master degree in physical therapy.

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Dedication

-To the spirit of my father who encourage me all the time to be educated.

-To my mother, and sisters who support me with love and compassion.
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<tbody>
<tr>
<td>AR</td>
<td>Argon laser</td>
</tr>
<tr>
<td>ALPcS₂</td>
<td>Aluminum disulphonated Pathalocyanine.</td>
</tr>
<tr>
<td>ATP</td>
<td>Adenosine Tri Phosphate.</td>
</tr>
<tr>
<td>CO₂</td>
<td>Carbon dioxide Laser</td>
</tr>
<tr>
<td>COPD</td>
<td>Chronic Obstructive Pulmonary Disease</td>
</tr>
<tr>
<td>CW</td>
<td>Continuous Wave</td>
</tr>
<tr>
<td>DNA</td>
<td>Deoxyribo Nuclic Acid.</td>
</tr>
<tr>
<td>FDA</td>
<td>Federal and Drugs Administration.</td>
</tr>
<tr>
<td>Ga.Al.As</td>
<td>Gallium Aluminum Arsenide laser</td>
</tr>
<tr>
<td>He-Ne</td>
<td>Helium-Neon laser</td>
</tr>
<tr>
<td>IR</td>
<td>Infra red laser</td>
</tr>
<tr>
<td>Laser</td>
<td>The word is an acronym for Light Amplification by Stimulated Emission of Radiation</td>
</tr>
<tr>
<td>Nd: YAG</td>
<td>Neodymium: Yttrium-aluminum-garnet laser</td>
</tr>
<tr>
<td>METS</td>
<td>Macfarland Equivalence Turbidity Standard</td>
</tr>
<tr>
<td>mL</td>
<td>Milliliter.</td>
</tr>
<tr>
<td>MRSA</td>
<td>Methicillin Resistant <em>Staphylococcus aureus</em></td>
</tr>
<tr>
<td>MSSA</td>
<td>Methicillin Susceptible <em>Staphylococcus aureus</em></td>
</tr>
<tr>
<td>mW</td>
<td>Mill Watt</td>
</tr>
<tr>
<td>NADH</td>
<td>Nicotinamide Adenine Dehydrogenase</td>
</tr>
<tr>
<td>Ne/Yag</td>
<td>Neodymium Yttrium Aluminum Garnet laser</td>
</tr>
<tr>
<td>RNA</td>
<td>Ribo Nuclic Acid</td>
</tr>
<tr>
<td>PG</td>
<td>Prostaglandin</td>
</tr>
<tr>
<td>SBA</td>
<td>Sheep blood agar</td>
</tr>
<tr>
<td>TBO</td>
<td>Toludine Blue O</td>
</tr>
<tr>
<td>US</td>
<td>Ultra Sonic</td>
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