

The effect of antibacterial photodynamic therapy with chlorin e6 on multidrug-resistant strain of Staphylococcus aureus

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Abstract:

Multi drug resistant strains of Staphylococcus aureus (*S. aureus*), which is a type of gram-positive bacteria that can cause infection, especially in the skin and many parts of the body. Over the years, strains of *S. aureus* have become resistant to existing antibiotics. This has led to the research and development of different treatment modalities to treat infections caused by multi drug resistant bacteria. Photodynamic Therapy (PDT) is an alternative treatment technique investigated for this purpose. PDT is, by definition, a method that produce toxic compounds to the infected region by stimulating the light-sensitive substance with a light source at a certain wavelength. In this respect, the death of resistant bacteria is ensured. In this study, chlorin e6 (Ce6) was used at different concentrations as a light sensitive substance with 655 nm laser light source with diode pump working at maximum 2 Watt power. Effective photodynamic therapy with Ce6 resulted in effective mortality rates on Multi drug resistant *S. aureus* strain.

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