بسم الله الرحمن الرحيم

(الحَمْدُ للهِ ربِّ العَالَمِينَ)

صدق الله العظيم

سورة الفاتحة: الآية (1)

DEDICATION

To my dear parents

To my extended family

To my teachers and colleagues

ACKNOWLEDGEMENT

Thank ELMIGHTY ALLA for giving me patience and health to finish this work.

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ABSTRACT

β-lactam antibiotics are important antibiotics which are used for treatment of staphylococcal infections. The objective of this study was to assess β-lactamase produced by staphylococci isolated from clinical specimens.

A total of 100 isolates of staphylococci were obtained from Omderman Teaching Hospital. The isolates were rechecked by Gram's stain and biochemical tests. Presence of β-lactamases in these isolates were evaluated by iodometric and chromogenic cephalosporin tests.

Staphylococci were found to be 97 *Staphylococcus aureus* and 3 *Staphylococcus epidermidis*. Study on assessment of β-lactamases produced by these isolates revealed that out of 100 staphylococci, 78 (78%) and 92 (92%) were β-lactamase producers when screened by iodometric method and chromogenic cephalosporin method respectively.

The study concluded that the chromogenic cephalosporin method is considered as golden standard method for detection of β-lactamase enzyme in staphylococci. Further studies with other *Staphylococcus* species are required to validate these results.

الخلاصة

مضادات البيتالاكتام من أهم المضادات الحيوية التي تستخدم لعلاج الأمراض التي تسببها المكورات العنقودية.

الهدف من هذه الدراسة تقويم انزيمات البيتالاكتام عند المكورات العنقودية المعزولة من العينات الإكلينيكية وقد استخدمت 100 عينة من المكورات العنقودية من مستشفي امدرمان التعليمي.

هذه العينات المعزولة اجري عليها صبغة جرام والإختبارات البيوكيميائية وقد أجرى اختبار iodometric method , و chromogenic cephalosporin method لهذه العينات المعزولة لمعرفة وجود إنزيم البيتالاكتام الذي يفرز بواسطة المكورات العنقودية.

وقد أجري هذا الاختبار علي 97 عينة من *Staphylococcus aureus* , و3 عينات من *Staphylococcus epidermidis*

وكانت النتائج المتحصل عليها (78%)78 و(92%)92 قد افرزوا انزيم البيتالاكتام عندما اجري عليها اختبار iodometric method , و chromogenic cephalosporin method.

خلاصة هذه الدراسة هي ان اختبار chromogenic cephalosporin method يعتبر هو الطريقة المثلي لتقويم انزيمات البيتالاكتام عند المكورات العنقودية.

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