



## الآية

قال تعالى:

" وَمَا مِنْ دَابَّةٍ فِي الْأَرْضِ إِلَّا عَلَى اللَّهِ رِزْقُهَا وَيَعْلَمُ  
مُسْتَقَرَّهَا وَمُسْتَوْدَعَهَا ۗ كُلٌّ فِي كِتَابٍ مُبِينٍ "

صدق الله العظيم

سورة هود الآية (6)

**DEDICATION**

To my parents  
To my brothers and sisters  
To my friends  
To my colleagues  
To all whom I love them

## **ACKNOWLEDGEMENT**

- Praise be to ALLAH who helped me to complete this •  
search
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.me the support to accomplish this research

## **ABSTRACT**

This study aimed to build a model suitable to describe the difference in the risk of death for patients with breast cancer to those who have been giving them chemotherapy and who have not been giving them chemotherapy using a Cox model hazard ratio, and data were collected from the records of patients with breast cancer at the National Center for radiotherapy and nuclear medicine in Khartoum at the period (2009 -2011).

:The study reached the following results

There are significant differences on hazard ratio among patients who given the chemotherapy and who did not given chemotherapy, there is a significant difference to the hazard ratio in terms of the stage of the disease, there are significant differences between patients who given radiotherapy and those who did not given radiotherapy in terms of hazard ratio, there are significant differences between patients who given hormonal therapy and those who did not given hormonal therapy in terms of hazard ratio, there are significant differences on hazard ratio among patients who have undergone surgery, and those who did not undergo surgery

:The study recommended the following

The possibility of using the Cox model for the hazard ratio of multivariate in the calculation of the value of hazard at any given time and the use of parametric survival regression models in the analysis of the study data

## المستخلص

هدفت هذه الدراسة لبناء نموذج مناسب لوصف الفرق في خطر الوفاة لمرضي سرطان الثدي للذين تم إعطائهم العلاج الكيميائي والذين لم يتم إعطائهم العلاج الكيميائي وذلك باستخدام نموذج كوكس للأخطار النسبية، وأخذت البيانات من سجلات مرضي سرطان الثدي بالمركز القومي للعلاج بالأشعة والطب النووي بالخرطوم في الفترة (2009 - 2011).

### وتوصلت الدراسة للنتائج التالية:

- أن هنالك اختلاف معنوي في منسوب المخاطرة بين للذين تم إعطائهم العلاج الكيميائي والذين لم يتم إعطائهم العلاج الكيميائي.
- أن هنالك اختلاف معنوي في منسوب المخاطرة بين مراحل المرض.
- أن هنالك اختلاف معنوي في منسوب المخاطرة بين للذين تم إعطائهم العلاج الإشعاعي والذين لم يتم إعطائهم العلاج الإشعاعي.
- أن هنالك اختلاف معنوي في منسوب المخاطرة بين للذين تم إعطائهم العلاج الهرموني والذين لم يتم إعطائهم العلاج الهرموني.
- أن هنالك اختلاف معنوي في منسوب المخاطرة بين للذين خضعوا لعملية جراحية والذين لم يخضعوا لعملية جراحية.

### وأوصت الدراسة بالتالي:

- إمكانية استخدام نموذج كوكس للأخطار النسبية المتعدد في حساب قيمة دالة المخاطرة عند أي وقت معين.
- استخدام نماذج انحدار البقاء المعلمية في تحليل بيانات الدراسة.

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