肝癌病人放射線累積劑量、細胞激素濃度與症狀嚴重度相關性之縱貫分析

Relationships Among Radiotherapy Dosage, Symptom Distress, and Cytokine Levels in Patients With Hepatocellular Carcinoma - A Longitudinal Study

中文摘要

本研究之目的在探討肝癌病人接受放射線治療之劑量、症狀困擾與細胞激素 IL-1 β、IL-2、IL-6、IL-8、IL-10、IL-12 及 TNF-α 濃度的變化及相關性。採用縱貫式相關性研究設計法，以台灣版安德森症狀量表來測量及分析肝癌病人接受放射線治療期間多種的症狀困擾，並使用酵素免疫分析法（ELISAs）測量細胞激素 IL-1 β、IL-2、IL-6、IL-8、IL-10、IL-12 及 TNF-α 濃度的變化，使用 GEE 統計方法之廣義估計方程式（Generalized Estimating Equation, GEE）的迴歸分析方法進行相關性分析，經由調整其他相關變項及重複施測的影響來調整各變項間相依性，探討肝癌放射治療六週間累積劑量、症狀困擾與細胞激素之關聯性。

本研究以方便取樣方式，於北區某大學附設醫院的放射腫瘤科門診進行收案，共收集 48 位接受放射線治療的肝癌病人。研究發現：

一、肝癌病人接受放射線治療期間「放射線累積劑量」與「症狀困擾強度」未達統計上顯著相關。

二、肝癌病人接受放射線治療期間第三週至第六週「累積劑量」與「細胞激素 IL-12 濃度」達到統計上顯著正相關。

三、肝癌病人接受放射線治療期間，控制「時間因素」、「累積劑量」及「有無接受化療」的變項後發現：

1.IL-1 β 與「症狀強度平均值」、「噁心」、「疲憊」、「睡眠障礙」、「健忘」、「思睡」、「口乾」、「嘔吐」及「疲勞程度平均值」有統計上顯著正相關，

2.IL-6 與「噁心」、「鬱悶」、「健忘」、「思睡」、「悲傷」、「嘔吐」、「腸胃到症狀群集」及「一般症狀群集」有統計上顯著正相關，

3.IL-12 與「噁心」有統計上顯著正相關，

4.TNF-α 與「症狀強度平均值」、「噁心」、「口乾」、「嘔吐」及「腸胃道症狀群聚」有統計上顯著正相關。

5.IL-2、IL-8 及 IL-10 與本研究中的症狀無統計上顯著相關。

英文摘要

The purpose of this study was to investigate the relationships among radiotherapy accumulate dosage, symptom distress, and cytokine levels in patients with hepatocellular carcinoma. The study was designed as a longitudinal study. Symptom distresses were assessed by MADSI questionnaire and cytokine levels was measured by ELISA. Generalized Estimating Equation (GEE) model was applied to explore the relationships among radiotherapy accumulate dosage, symptom distress, and cytokine levels from week 0 to week 6. Samples were recruited from the radioncology department of a university hospital and forty-eight patients were included in this study.

The study found that:

1.The relationships between radiotherapy accumulate dosage and symptom distress was not statically significant.

2.The relationships between radiotherapy accumulate dosage from week 3 to week 6 and cytokine level of IL-12 was statically significant.

3.If “time”, “radiotherapy accumulate dosage” and “chemptherapy or not” were adjusted, it had been found that:

(1).The relationships between level of IL-1β and symptom distress, nausea, fatigue, disturbed sleep, remembering, drowsy, dry mouth, emesis, and average fatigue were statically significant.

(2).The relationships between level of IL-6 and nausea, distress, remembering, drowsy, sad, emesis, gastrointestinal symptom cluster, and general symptom cluster were statically significant.

(3).The relationships between level of IL-12 and nausea was statically significant.

(4).The relationships between level of TNF-αand symptom distress, nausea, dry mouth, emesis, and gastrointestinal symptom cluster were statically significant.

(5).The relationships between levels of IL-2, IL-8, IL-10 and all symptoms were not statically significant.