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| • 英文關鍵字 | -- | | |
| • 中文摘要 | 放射治療導致的疲倦是很常有之早期及慢性的副作用。據研究報導，多達 80% 病人於治療中有早期發生之疲倦，而有多達 30% 於治療後仍有慢性疲倦副作用。至今放射治療導致疲倦的原因仍不十分清楚，許多的相關研究也提出放射治療的程度、放射治療的長短、放射治療的癌症部位、及使用合併治療的模式等都有不同的影響。疲倦比疼痛、性生活、癌症本身及治療模式都更嚴重影響生活品質。而造成疲倦之原因包括有貧血、體重減輕、發燒、疼痛及感染等，以及和上述原因相關之 Cytokines、如 IL-1、IL-2、TNF-α 及 interferon 等。 1. 在先前試驗中，我們對 45 位肝癌病人，符合收案標準進行每天 2Gy 劑量、每週 5 天共 50Gy 之立體定位放射治療（沒有併用其他治療）進行實驗，結果顯示疲倦的程度、疲倦的時間長短及疲倦對生活之影響和放射治療累積劑量有顯著相關。 2. 本實驗共收集 20 例患者，但僅檢測 13 位癌症病人血液適合檢測。檢測結果患者 cytokines 濃度(IL-1b、IL-2、IL-6、IL-8、IL-10、IL-12、TNF)，較正常人血清濃度高出 1.5 到 6.5 倍。顯示 Cytokines 和許多體內器官及互相反應是造成癌症病人疲倦可能原因。 3. 本實驗針對肝癌病人於 6 週治療內每週檢測病人血液中 Cytokines 濃度(IL-1b、IL-2、IL-6、IL-8、IL-10、IL-12、TNF)，同時以林佳靜教授發展之台灣版簡明疲憊量表( BFI-Taiwan Form）來檢定疲倦的程度。病人 Cytokines 濃度普遍比正常血清高，其中有部分病人的 Cytokines 濃度變化與疲倦有相關性；但因 Cytokines 濃度受到全身各器官與生理的影響，大多數病人 Cytokines 濃度僅較高於正常血清但其變化與疲倦的關係不高。 本實驗顯示 Cytokines IL-2, IL-6, IL-8 濃度與疲倦具有正相關，但因 Cytokines 濃度受到全身各器官與生理的影響，機制與相應方法仍需進一步了解。 | | |

- 英文摘要

Radiation therapy induced fatigue is a common early and chronic side effect, reported in up to 80% and 30% of patients during radiation therapy and at follow-up visit, respectively. The etiology of radiation therapy induced fatigue are still not understood, and in many studies the degree and time course of fatigue was shown to depend on site of tumor and treatment modalities. Fatigue is the major affect of quality of life more than pain, sexual dysfunction and other cancer or treatment related symptoms. Factor contributing to fatigue including anemia, weight loss, fever, pain, medication and infection; and their natural nataghists , such as IL-1, Il-2, TNF-α and interferon. In our preliminary data, 45 hepatoma patients undergoing stereotactic radiotherapy( 2 Gy/ day, 5 fractions/ week, total of 50 Gy) were shown that their fatigue intensity, fatigue duration and fatigue interference were significantly increased during treatment course. There are 7 cytokines(IL-1b、IL-2、IL-6、IL-8、IL-10、IL-12、TNF) of 20 cancer sera were analyzed and their concentration is 1.5 to 6.5 times higher than normal sera. This shows that radiotherapy-induced fatigue may correlate the changes of level of cytokines, besides duration of treatment or time-dose factor in radiotherapy is also an important factor. The cytokines(IL-1b、IL-2、IL-6、IL-8、IL-10、IL-12、TNF) of sera from hepatoma cancer patients were analyzed during the 6 weeks of radiotherapy, and Brief Fatigue Inventory- Taiwan Form（BFI）was used to score of fatigue in cancer patients receiving radiotherapy. The cytokines concentration of patient sera were higher than normal sera. Some changes of cytokines concentration positively related to the scale of fatigue. The alteration of cytokines concentrations in these 13 samples might be affected by many factors that could not be manipulated by this experiment. However the data show that there are correlation between IL-2, IL-6, IL-8 and fatigue. Since fatigue is one of the most common long-term radiotherapy side effects, numerous patients continue to seek information. This study need further investigation to identify the correlation of the fatigue and cytokines and the mechanism of cytokines to fatigue.