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A preliminary study of the markers of pulmonary endothelial cells in acute lung injury in rabbits*

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Abstract Objective: To study the changes of the markers of pulmonary vascular endothelial cells (PVEC) in acute lung injury (ALI) in rabbits. Methods: 31 rabbits were randomized into the control group (n= 10) and the bone marrow extract group (n= 21, BME). The animals of BME group received an injection of 0.35 ml/kg of BME in an injection speed of 2 ml/hour. All rabbits were killed 6 hours later. Granular membrane protein 140 (GMP-140), endothelin-1 (ET-1) and circulating endothelial cells (CECs) were measured with immunoradiometric assay (IRMA), radioimmunoassay (RIA), and immunohistochemistry (IHC) respectively. Results: GMP-140, ET-1 and CEC began to increased in the first 0.5 hour and the increase lasted for 6 hours. The drammatical elevation of plasma level of GMP-140 (3.25 times) was negatively correlated to PaO_2 but positively correlated to other parameters. The GMP-140 on the surface of PVECs was weakly revealed with IHC staining. Conclusion: Slow-rate injection of BME can establish and acceptable model of ALI and the determination of GMP-140 might beaa satisfactory criterion for early surveillance and for the prognosis of ALI in clinical practice.

Key words acute lung injury; endothelial cell; pulmonary vasculature; granular membrane protein-140; endothelin-1; rabbit

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立体定向放射治疗下腔静脉癌栓 1例报告

One case report of inferior vena cave cancer embolus treated with stereotactic radiotherapy

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患者男性, 55岁, 因腹泻 1月, 1997年 12月腹部 B超和CT检查发现肝右叶巨大占位, AFP> 1 000 ng/ml, 确诊为原发性肝癌, 行二疗程介入治疗后肝右叶肿块有较明显缩小, 由约 12 cm× 7 cm大小缩小至约 8 cm× 6 cm大小。 1998年 3月初无明显原因出现胸闷、气促、腹胀、双下肢浮肿等, B超检查提示腹水阳性, MRI检查发现肝段下腔静脉增粗, 流空效应消失, 其中充满软组织块影, 诊断下腔静脉内癌栓形成。于 1998年 3月 26日至 4月 2日采用北京大恒公司 Star-1000型体部立体定向放射治疗系统进行治疗。在 CT增强影像上能清晰地显示肝段下腔静脉及其内之癌栓, 应用 Star-1000型立体定向治疗计划进行三维重建和治疗计划设计, 采用 6 MV-X线、直径 30.3 mm限光筒, 单平面 360度旋转照射, 两个靶点纵向排列, 治疗长度约 5 cm, 处方剂量 10 GY/次, 下腔静脉边缘剂量≥ 80%, 隔日 1次, 共 3次。治疗 2次后患者胸闷、气促等症状即有所缓解。治疗结束后进一步改善, 双下肢水肿、腹水等消失。 2月后患者病情稳定, 复查 MRI显示下腔静脉内癌栓已完全消失。 3月后胸片检查发现双肺广泛转移。治疗后 5月患者死于全身衰竭。

讨论

下腔静脉内癌栓在肝癌和其他恶性肿瘤患者中并非少见, 以往治疗方法不多, 主要为手术切除和下腔静脉内置入金属支架[1,2], 这两种方法创伤大、死亡率和并发症发生率高, 大多数患者无法耐受。立体定向放射治疗具有定位准确、靶区剂量分布集中、周围组织剂量低损伤小等特点, 采用若干次大剂量照射, 可产生较强的生物效应, 从而能取得较为迅速而充分的治疗效果。本文首次将立体定向放射治疗用于下腔静脉癌栓的治疗, 并取得了良好的治疗效果。提示立体定向放射治疗是治疗下腔静脉癌栓的有效方法, 值得应用推广。

关键词 癌栓; 下腔静脉; 立体定向放射治疗
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