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药敏试验表明显示,7例敏感。3例耐药。正规化疗一疗程后复查,7例体外药物敏感者 6例治疗后缓解,患者自觉症状明显缓解,胸部 X线片示肺部病灶明显缩小(> 50%);仅 1例治疗后病情恶化。3例体外耐药者联合化疗后复查,症状加重,X线检查见肺部病灶明显增大。本组体外药敏结果与临床治疗反应性间相比较,P值为 0.999996,提示无明显差异;体外药敏预测符合率为 90%,阳性符合率为 85.71%,阴性符合率为 100%。预测准确率与文献报道一致[5]。进一步证实 MTT法能较好地预测临床化疗的反应性。

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Clinical significance of bronchofibroscopic biopsy to test drug sensitivity of lung cancer cells

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Abstract Objective: To investigate the possibility of collecting the lung cancer cells with bronchofibroscopic biopsy for primary culture for the test of drug sensitivity to reduce the blindness of the clinical management of lung cancer. Methods: Forty six lung cancer specimens obtained with bronchofiroscopic biopsy for primary culture and the test of sensitivity of the cancer cells to three drugs of VCR, DDP and VP_{16} was conducted with MTT assay. Then the result of the test was compared with the clinical response. Results: Among the 10 successfully cultured cases 6 out of the 7 cases being sensitive to the three drugs *in vitro* exhibited good clinical response and other 3 cases resistant to the drugs *in vitro* had no clinical response. Conclusion: The primary culture of lung cancer cells obtained with bronchofibroscopic biopsy is useful to select the best anticancer drug and to design an individual anticancer chemotherapy regimen and thus the efficient rate of chemotherapy for lung cancer can be increased.

Key words bronchofibroscopic biopsy; lung cancer; primary culture; MTT assay; anticancer drug

细胞凋亡和细胞增殖抑制在射线损伤造血功能中的作用

The role of apoptosis and cell proliferation suppression in radio-induced hematopoietic dysfunction

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射线对造血组织的损伤机理是放射病的研究重点。凋亡概念的提出为揭示损伤的分子机理开辟了一条新途径。放射损伤作为一个确定的诱发凋亡的方法,它的效应是肯定的。射线诱导的凋亡是受基因调控的一个主动过程,涉及诸多基因。本实

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Comparative study of the vasculature between normal and leiomyomatous tissue of human small intestine

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Abstract Objective: To establish the normal vascular anatomy compare it with that of leiomyomatous tissue in the human small intestine. Methods: Eight biopsy specimens from normal adults and 10 from 15 pathologically confirmed leiomyomas from 10 patients were studied with vascular cast, angiography and quantitative analysis. Results: The vasa recta of the jejunum was composed of two long and one short branches while that of the ileum were composed of one long and one short branches. There were anastomoses between vasa recta before they entered the intestinal wall. The vascular density was the lowest in the duodenal bulb, increased from low to high in the jejunum and then went down in the ileum. The vasculature of leiomyomatous tissue looked like a spider net with large lumen, proliferation in bundles, rich anastomosis, high vascular tortuosity and interruption sign. There was pooling of contrast medium in leiomyosarcoma. The vascular density was significantly higher in the leiomyomatous tissue than in the normal one ($P < 0.05$). Conclusion: Understanding of the vascular distribution in the normal intestine is helpful for the interventional diagnosis and therapy of intestinal tumors. The leiomyomatous neoplasms in the small intestine are rich in vascularity and the benign and malignant tumors possess different vascular features.

Key words intestine; leiomyomatous neoplasm; blood vessel

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验从造血细胞凋亡和增殖抑制两个方面,应用病理学,细胞生物学和分子生物学方法,研究射线在体损伤造血功能的发生及其机理。主要结果如下:

1.在体射线损伤后,骨髓的形态学变化与凋亡的特点相符,用多种特异的凋亡细胞检测方法,证实凋亡造血细胞死亡的一个重要途径。脾脏的损伤也涉及凋亡。用 ISEL特异标记凋亡细胞,显示了凋亡细胞的形态学特点和凋亡小体的清除过程,从形态学上证实诱导凋亡是射线损伤造血细胞的途径之一。

2.进一步,根据凋亡细胞在流式细胞仪检测时出现的亚 G_0峰,用流式细胞仪观察射线诱导的在体骨髓造血细胞凋亡的量效和时效关系。4 Gy~ 8 Gy射线照射后,凋亡发生率的峰值约为 30%。随剂量的增加,造血细胞凋亡发生率到达高台值所需的时间逐渐前移,最早可在照后 4 h或更短的时间内。各剂量照后 8 h以内,凋亡发生率差异较大。凋亡发生的高峰期在 12 h之前, 48 h已接近正常。这与在体时存在的清除机制有关。凋亡的造血细胞的流式细胞仪光栅特性改变, FLC和 SLC均降低。造血细胞凋亡形成典型的梯型带。

3.在 4 Gy~ 10 Gy射线损伤后 4 h,骨髓细胞已出现“ G1期停滞”,达 80%左右。48 h内, G1期细胞的比例一直维持在这个高水平上,仅 4 Gy组的 8 h和 10 Gy组的 24 h有短时的明显回落。

4. 4~ 10Gy照射后 4 h,骨髓细胞的增指数就显著下降,在观察时间内一直处于较低水平 (仅为 20%或更低),各剂量组间差异不显著。各剂量照射后, Brdu标记指数明显降低, 24 h最低。4 Gy组下降较缓,照后 8 h才显著低于照组,其它剂量组则在照后 4 h就显著降低。

5.在 4 Gy~ 8 Gy照射后 4 h或更长,以及 10Gy照射后 48 h以内,几乎看不到骨髓造血细胞的 CFU- GM集落,推测存在一个“成集落休克期”。射线损伤后,造血细胞形成的 CFU- GM集落构较散,常可以看到由 10~ 20细胞组成的细胞群,此即成集落失败,乃造血细胞自身的因素所致。

6.观察 Brdu标记细胞的损伤情况,发现照后 4小时各剂量组的细胞标记指数明显降低,此后持续降低。Brdu标记细胞比例的降低明显受照后时间的影响, 12 h内下降幅度明显。可见,处于细胞周期中的细胞更易受射线损伤。并且损伤主要发生在照后 12 h之前。

7.射线损伤后, p53基因表达升高不明显,说明转录水平对 p53蛋白的调节是次要的; GADD45基因表达显著增强,这很可能是 p53调控所致; bc1- 2基因表达有抑制,提示它抑制凋亡的能力减弱。

本实验结果表明,从造血细胞损伤方面看,细胞凋亡是射线损伤造血功能的一个重要途径,并且射线诱导的凋亡有一定的量效和时效关系;从造血细胞增殖能力方面看,射线抑制细胞的增殖能力和成集落能力,更严重地杀伤处于周期内的细胞。这两方面作用的结果导致在体射线损伤后造血功能的严重障碍。p53 GADD45和 bc1- 2基因可能与在体射线诱导凋亡的发生有关。可见深入研究射线诱导的造血细胞凋亡的调控过程,将有助于揭示放射损伤所致的造血功能障碍的机理。

关健词　放射损伤;造血细胞;凋亡;细胞增殖;基因表达;形态学; GADD45; p53　bcl-2;小鼠

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