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An Experimental study on the origin of circulating endothelial cells from the conversion of vascular endothelial cells

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Abstract Obsevation on the circulating endothelial cells (CEC) can be used to study the changes of the vascular endothelial cells (VEC) in vivo, which is quite valuable in its clinical application. Neverthiless, the origin of CEC remains not clarified. In this study, the origin of CEC was investigated with cultures of the endothelial cells of human umbilical vein. It was found that CEC is a kind of cells existing in circulating blood and originating from desquamated VEC under physiological conditions. The direct proof of this conversion was provided. And the conversion of VEC to CEC is a process of steady progression.

Key words endothelium; cells, cultured; umbilical veins

幼龄小鼠脾切除和脾保留对肺炎球菌感染的影响

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随着免疫学的进展，脾脏功能日趋重视，但从年龄观点，保脾和切脾的问题仍有争议[1]。为此，本实验就不同年龄小鼠脾脏的去留对肺炎球菌感染的影响作进一步研究，现报道如下：

1 材料与方法

健康雄性小鼠 224 只，幼龄鼠 3～4 周龄，体重 12～15g；成年鼠 3～4 月龄，体重 30～35g，随机分组（表 1、2）。Ⅰ型肺炎球菌干燥菌种经复苏、培养、转种后配制成 80 万/ml 悬液。以正常组动物 LD_{50} 为标准，即幼龄小鼠为 6 万细菌数，成年小鼠为 10 万，分别对各年龄组动物行腹腔注射，观察 3d 内死亡率及病理变化。

2 结果

各组动物感染肺炎球菌后死亡率见表 1、2。

表 1 幼龄各组小鼠感染肺炎球菌死亡率

	死亡率		
	脾切除组	假手术组	正常组
实验Ⅰ	82%(18/22)		32%(7/22)
实验Ⅱ	85%(17/20)	55%(11/20)	50%(10/20)

注：和对照值比 $P<0.01$

表 2 成年各组小鼠感染肺炎球菌死亡率

	死亡率		
	脾切除组	假手术组	正常组
实验Ⅰ	80%(16/20)	65%(13/20)	65%(13/20)
实验Ⅱ	85%(17/20)	75%(15/20)	65%(13/20)

注：和对照值比 $P>0.05$

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Multiple organ failure in patients with severe acute pancreatitis

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Abstract In order to clarify the limitative factors in the management of severe acute pancreatitis (SAP) especially the problems of the complicated multiple organ failure (MOF), 70 cases of SAP, of which 17 were complicated with MOF, admitted to our hospital in the past 16 years were reviewed. The overall mortality rate of the series was 20.0% (14/70), and the death of 12 cases out of the 14 was associated with MOF (85.7%) and that of the other 2 with single organ failure (14.3%).

MOF occurred in 17 cases with a mortality rate of 70.0%. Two patterns of MOF manifestations identified: A rapid single-phase of MOF was found in 7 cases. It developed rather early after the onset of SAP and was associated with severe pancreatic necrosis and early shock. And a delayed two-phase of MOF was seen in 10 cases. It developed progressively with a lagging interval and from the pancreatic necrosis and subsequent infection. The clinical manifestations of MOF were characterized by a severe and systemic inflammatory response. It is believed that the systemic inflammatory response trigged by the septic material released from the pancreatic necrotic focus seems to be the pathological channel to link SAP with MOF.

Key words pancreatitis/MO; acute disease; multiple orgen failure

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从表 1 可见 幼龄脾切除小鼠的死亡率与对照组动物的死亡率有显著差别，说明幼龄脾切除动物对肺炎球菌感染较成年组敏感。由表 2 得出成年脾切除小鼠的死亡率与对照组的无差别。各组动物感染肺炎球菌死亡后心、肺、肝、肾、脾等脏器均有不同程度充血，出血和炎性浸润，间或有小脓肿。

3 讨论

肺炎球菌是非胞内寄生菌，机体主要依靠抗体，并在补体、Tuftsin 及吞噬细胞的协同作用下对其进行溶菌作用，从而发挥体液免疫的效应。脾脏含有多量 B 细胞，是抗体产生的主要部位。本实验以 I 型肺炎球菌 LD_{50} 分别攻击幼龄、成年各组小鼠，重复 2 次（实验 I，实验 II），结果一样，即幼龄脾切除动物的死亡率较对照动物显著增加（$P<0.01$），说明幼年小鼠脾脏在免疫方面起重要作用，因脾脏在胚胎晚期已发育成熟，1 岁时脾重量比出生时增加 200%～400%，超过其他器官发育速度，此时白髓高度发育，生发中心很明显[2]。因此，当机体其他网状内皮器官尚未发育成熟，脾在抗感染中起特殊作用[3]，也说明小儿脾切除易发生暴发性感染的原因。而成年脾切除后脾脏免疫功能可能由其他器官所代偿[4]，但仍有少数病人存在脾功能减退综合症，如感冒，乏力等，其原因可能是这些人的代偿能力欠佳，脾切除的不良效果易于暴露。因之，若条件允许，脾外伤，尤其是婴幼儿仍以保留 脾脏为佳。

关键词 小鼠；脾切除术；肺炎双球菌感染/死亡率

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