血液疗法进展和未来

The Recent Research and Future Trend of Hemotherapy

S8

主席：刘嘉馨

2020 年 11 月 21 日 星期六 13:00-16:30		
时间	**演讲者姓名和单位**	**演讲题目**
13:00-13:30	**刘嘉馨** 中国医学科学院输血研究所	血液疗法新概念和进展
13:30-14:00	**陈德芝** 江苏省中医院	UBIO 疗法在感染类疑难病症治疗应用和规范
14:00-14:30	**刘承宜** 华南师范大学	无创光疗在血液疗法上的应用
14:30-15:00	**单桂秋** 南部战区总医院	富血小板血浆拓展应用新技术
15:00-15:30	**李忠俊** 陆军军医大学附属新桥医院	治疗性血浆置换
15:30-16:00	**翟庆斌** 成都市佳颖医用制品有限公司	论自体血液治疗的工程过程安全性管理

主席：刘嘉馨

Email:248759611@qq.com

男，中国医学科学院输血研究所所长，研究员，博导。血液疗法与工程分会主委。近年承担国家及省部级等各类科研项目 20 余项，获得各类科研经费 2000 余万元，发表中英文论文 40 余篇。

陈德芝

Email:779370301@qq.com

女，江苏省中医院输血科及血液治疗中心主任。血液疗法与工程分会副主委，从事医学工作 40 余年，先后主办，承办全国及省级经验交流大会 20 余场，发表论文 50 余篇，出版专著 5 部。

刘承宜

Email: liutcy@scnu.edu.cn

男，运动人体珠江学者岗位学科带头人，华南师范大学教授，博导。血液疗法与工程分会副主委。近年承担国家及省部级科研项目 20 余项，所发表的论文被 SCI/SSCI 收录 80 余篇。

单桂秋

Email: rabbit_2007@126.com

男，南部战区总医院输血科主任、医学博士、主任技师、硕导；全军输血管理学委员会副主委；承担国家及省部级课题 15 项，获科研基金 1000 余万元；发表 SCI、中文核心期刊论文 40 余篇，获广东省 / 军队科技进步二等奖 3 项。

李忠俊

Email:1578771266@qq.com

男，陆军军医大学第二附属医院检验医学中心主任，主任医师 / 教授，博导。中国医师协会输血科医师分会常委。承担国家科技部重大专项、国家基金委重大国际合作项目等 10 余项课题。发表 SCI 论文 30 余篇，单篇最高 IF 14.612 分。

翟庆斌

Email: cdzhaiqb@163.com

男，成都市佳颖医用制品有限公司 / 成都市龙泉从容健康管理有限公司投资者，国内首台单采血浆设备研发者，1994 年屹今专业从事血液分离技术与工程技术的研究、产品的研发和生产制造，荣获 20 余项血液分离技术专利。

血液疗法新概念和进展

刘嘉馨
单位：中国医学科学院输血研究所
Email: 248759611@qq.com

摘要：血液疗法与工程是一门多学科交叉融合的边缘学科，其通过使用或改变血液成份为目的的治疗方法，包括但不限于输血、血液治疗性单采 / 置换、血液替代以及体外血液物理 / 化学处理治疗等。这就要求从业人员拓展既往认知和思维模式，了解和学习血液疗法新技术和进展。

Abstract: Hemotherapy and Engineering is an interdisciplinary subject which is a treatment that involves the use or modification of blood components, including blood transfusion, therapeutic blood components exchange or apheresis, blood substitute or blood physicochemical treatment In vitro, etc. Therefore, Practitioners are required to develop past cognitive and thinking patterns, learn about new techniques and advances in blood therapy.

UBIO 疗法在感染类疑难病症治疗应用和规范

陈德芝
单位：江苏省中医院
Email: 779370301@qq.com

摘要 : 紫外线 (UV) 可以通过诱导核苷酸内 T-T 二聚体的形成来阻止细菌和 DNA 病毒复制，也可以通过诱导 U-U 二聚体的形成来抑制 RNA 病毒复制。紫外线照射后形成的过氧化氢和含羟基自由基，也对细菌和病毒有杀灭作用。紫外线照射能激发血红蛋白产生 365nm 荧光，使核黄素的发色基团与病原体的核酸形成加合物，阻止病原体复制。紫外线 (UVB) 和紫外线 (UVC) 辐射可以激活树突状细胞 (DC)，促进它们产生维生素 D，诱导细胞产生多种内源性抗菌多肽譬如凯萨林菌素。研究表明，鸟分枝杆菌感染的单核细胞经体外紫外线照射处理取得了良好的杀菌效果。此外，体内多种细胞（包括白细胞，尤其是单核细胞）在紫外线照射后可以分泌多种热休克蛋白，从而在抗感染中发挥重要作用。

Abstract: Ultraviolet (UV) is able to prevent bacteria and DNA virus replication by inducing the formation of nucleotide T-T dimer, and may also inhibit RNA virus replication by inducing the formation of U-U dimer. UV radiation induced the production of hydrogen peroxide and hydroxyl radicals can also kill bacteria and viruses. In addition, UV irradiation may induce hemoglobin to excite fluorescence at 365nm, which causes chromophore such as riboflavin to form adducts with microbial DNA or RNA to inhibit pathogen replication. Furthermore, UVB and UVC activate dendritic cells (DC) to produce vitamin D, which induces the production of endogenous antibacterial polypeptides including cathelicidin in cells. Studies have shown that in vitro treatment with UV of Mycobacterium avium infected monocytes has achieved good results. In addition, a variety of cells in the body including leukocytes, especially monocytes, may secrete a variety of heat shock proteins after UV radiation, thus playing an important role in the infection control.

无创光疗在血液疗法上的应用

刘承宜
单位：华南师范大学
Email: liutcy@scnu.edu.cn

摘要：大多数慢性疾病都是自限性疾病，对西药治疗存在抵抗作用，但可以得到低水平单色光（LLL）的调节。维持功能稳定的负反馈机制称为功能内稳态（FSH），处于 / 远离 FSH 的功能称为正则 / 失调功能。LLL 不影响细胞正则功能，但促进细胞失调功能建立正则功能。本次演讲用定量差异方法综述了 LLL 在血液疗法中的应用。

Abstract: Most of no communicable diseases are self-limited diseases which are not affected with drugs in western medicine, but may be modulated with low level monochromatic light (LLL). In a biological system, negative feedback response can maintain a biological function that can be performed perfectly under certain condition. We have defined such a condition as function-specific homeostasis (FSH). A function in/far from its FSH is called a normal/dysfunctional function. LLL does not affected cellular normal functions, but promotes the transformation from a dysfunctional function to its normal function. The applications of LLL in blood therapy were reviewed in view of quantitative difference in this presentation.

富血小板血浆拓展应用新技术

单桂秋
单位：南部战区总医院
Email: rabbit_2007@126.com

摘要：近年来发现富血小板血浆中富含促进细胞分化、增殖和组织基质合成等生物活性物质，能促进损伤和退化组织的修复，在细胞培养、再生医学和组织工程发挥着重要作用。广泛应用到急、慢性创面，运动损伤，整形美容等各类组织损伤修复的临床治疗；还可用于包括干细胞在内的细胞培养和组织工程技术中，具有广泛的应用前景价值。

Abstract: In recent years, it has been discovered that platelet-rich plasma (PRP) is rich in bioactive substances that promotes cell differentiation, proliferation and tissue matrix synthesis, which can facilitate the repair of damaged and degenerated tissues, performs a primary function in regenerative medicine and tissue engineering. PRP is widely used in clinical treatments of acute and chronic wounds, sports injuries, plastic, cosmetic surgery and other tissue damage repair. In addition to this, PRP can also be used in cell culture and tissue engineering techniques including stem cells, with a broad range of applications.

治疗性血浆置换

李忠俊
单位：陆军军医大学附属新桥医院
Email: 1578771266@qq.com

摘要：目的 探讨国产血液成分分离机建立治疗性血浆置换床旁救治技术的临床应用效果。方法 建立了治疗性血浆置换床旁救治技术，回顾性分析 2010 ~ 2016 年采用床旁治疗性血浆置换技术救治 154 例患者的临床疗效，探讨床旁治疗性血浆置换技术的临床应用可行性。结果 该治疗性血浆置换床旁救治方案的总体有效率为 86. 4 %。其中吉兰巴雷综合征 74 例，有效率为 83 . 8 % ; 与血浆置换组相比，血浆置换 + 糖皮质激素组患者运动障碍明显改善（P < 0 . 05）。重症肌无力 50 例，有效率为 90.0 % 。急性肝衰竭 30 例，有效率为 86. 7 %。154 例患者不良反应发生率 8.4 % 。结论 应用民族产品血液成分分离机建立的床旁治疗性血浆置换技术安全、有效，是推动治疗性血浆置换技术临床应用的新途径。

Abstract: Objective To establish the treatment technique of therapeutic plasma exchange（TPE）by domestic blood separator（NGL-XCF 3000）at bedside for the clinical application to treatments in 154 patients. Methods Medical records of 154 patients，who received TPE treatments in the hospital between 2010 and 2016，were collected and retrospectively analyzed. The TPE at bedside was established ，and the clinical feasibility was studied. Results The overall efficacy rate of the treatment technique was 86. 4 %. The results of TPE clinical applications showed a total effective rate of 83. 8 % in 74 cases of Guillain-Barre syndrome. An improvement of dyskinesia was seen in the patients when the TPE was used combined with glucocorticoids（ P < 0 . 05）. Similarly ，the effective rates of 90 per cent and 86 . 7 per cent were achieved in50 cases of myasthenia gravis and 30 cases of acute liver failure，respectively. The overall incidence of adverse effects was found to be 8.4 % in 154 cases. Conclusion The domestic products are safe and effective for the therapeutic plasma exchange at bedside and worth using clinically.

论自体血液治疗的工程过程安全性管理

翟庆斌
单位：成都市佳颖医用制品有限公司
Email: cdzhaiqb@163.com

摘要：自体血液治疗是将患者血液引出体外，经过处理后回输患者体内，从而达到治疗目的的全过程。不同血液处理方法、血液处理量、患者状态等因素导致治疗过程复杂多变，如何利用声光电自动化控制技术平衡血液疗法的安全性和有效性显得尤为重要。我们将从工程的角度分析血液疗法的安全管理，包括血液抗凝、血液回输差错、交叉感染、空气栓塞等的风险控制防范管理，以达到临床治疗安全目标的同时保证治疗效果。

Abstract: Autologous blood therapy is the whole process of taking the blood out of the body and reinfusion the patient after treatment, so as to achieve the therapeutic purpose. Different blood treatment methods, volume of blood, patient status and other factors lead the process of blood therapy complicated and changeable. So it is particularly important to balance the safety and effectiveness of blood therapy by using the acousto-optic automatic control technology. We will analyze the safety management of autohemotherapy from the perspective of engineering, including the risk control and prevention management of blood anticoagulation management, blood transfusion error, cross infection, air embolism, etc. so as to achieve the safety and effectiveness goal of clinical treatment.