

2005年卒中进展:脑的恢复及康复

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脑卒中后康复目前正是方兴未艾,有越来越多的证据表明,康复的作用范围从皮质重组到健康相关的生活质量等均有涉及。

1 功能性神经影像学

局部脑损伤后的功能恢复取决于大脑皮质的可塑性及功能性神经网络未受波及的部分^[1]。对运动系统来说,有确凿的证据表明,皮质局部损伤后,其邻近皮质及较远部分皮质会发生变化,重新形成新的功能性网络^[2-4]。感觉皮层小的病变可因 γ -氨基丁酸(GABA)受体下调及NMDA受体上调^[5]而使远隔脑区域兴奋性下降,这些兴奋性及抑制性神经递质的改变是在功能重组过程中的适应性改变^[6]。其结果是,局部皮质损伤后其他部分皮质可使患者习得的新的运动功能^[3-4, 7-8],其效果依赖于康复训练的强度^[9]。伴随着这些兴奋性及抑制性神经递质的变化,在损伤半球残余的部分开始发生更广泛区域的结构变化,如树突发芽及突触形成。在损伤对侧感觉运动皮质区也可发生这种变化^[10-11]。我们可以推测,邻近区域及对侧损伤同位区域兴奋性的变化是侧枝抑制减少及经胼胝体抑制减少的结果。

同样确凿的证据表明,邻近区域及(即使对侧)脑是通过纤维通路联系的^[12-18]。最近重复经颅磁刺激(rTMS)研究表明,单侧的卒中损伤确实可减少经胼胝体的抑制^[19],并且非患侧半球确实抑制了患手的主动运动^[20-21]。

失语症患者讲话时对侧皮质脑血流量增加表明这是对语言等类区域的过度激活^[22],而这是一种非适应性代偿。这种“自相矛盾的功能性易化”^[23]可看作是因单侧语言区域受损而使经胼胝体的抑制减少的结果。因此,通过慢rTMS抑制这些偏侧语言等类区域的(矛盾的)激活可提高慢性非流畅性失语患者命名能力^[24]。

对卒中后失语患者来说,半球间语言传导通路中发生的变化对于失语的恢复非常重要。对失语症患者进行语言激活模式的研究,其结果证明,失语症患者讲话时,优势半球具有很好的康复激活结构^[25-28],同时右侧半球也可见到一些激活。除了右侧额上回^[29-30]及额下回^[31]的反应,只有当左侧额叶得以保存并可重新整合进功能性网络时,才可能出现有效的语言恢复^[32]。此外,最近的研究提示,右侧半球的激活增加可看作适应性失败或发生错误的标记,或看作打破了神经网络内的正常的半球间控制的结果^[33]。

右侧半球激活对残余语言功能的作用可通过rTMS结合功能性成像(如正电子发射断层成像)的方法来进行研究^[34]。对11例左侧大脑中动脉梗死2周后失语症患者进行了rTMS研究,rTMS刺激点根据可使左侧及右侧额下回(IFG)发生最大激活的区域来定位,其中3例激活左侧,8例激活双侧;5例右侧IFG激活的患者,rTMS可使语言任务的潜伏期延长或错误发生率增多,证明其确实可影响语言功能^[35]。在一项流畅性失语的患者研究中,对rTMS刺激发生右侧激活的患者比那些只有左侧激活的患者表现差,证明右侧网络区域缺乏有效的代偿潜能。

因此,经侧枝及经胼胝体的去抑制作用可使半球内及半球

间发生代偿,并且其效果不同,这可进行进一步研究:刺激运动皮质可提高手指的运动功能及在Purdue Pegboard试验中的表现。这是因为对经胼胝体的抑制解除,未刺激皮质的相应区域发生功能性易化作用^[36-37]。这一结果提示,半球间竞争解释了从未受损半球内的运动区发出的到损伤区的异常抑制性冲动^[20]。因此,通过rTMS可阻断对侧未受损区发出的抑制性冲动,减少运动残疾,减少偏侧空间忽视^[38-41]。在一项左侧半球卒中后5~11年的前瞻性研究中,Naeser发现,通过rTMS作用于右侧额下回三角区(Broca等位区),患者的图片命名能力显著并持久提高^[40]。作者假设,rTMS可降低右侧BA45区兴奋性,而这反过来又可调节双侧半球的语言网络活动。这个结果证明,若解除了经胼胝体的去抑制作用,对侧半球可易化语言功能;并且证明这是一种低级的半球间语言代偿。对于这一治疗失语的代偿性治疗方法尚需更大规模临床试验证实其长期疗效。

2 临床康复策略

尽管急性卒中早期溶栓治疗效果确实令人兴奋,但在此领域最大的进展仍是卒中单元。虽然卒中单元常被认为是代表了组织化特异性卒中治疗,但现在有大量证据表明,在其中是多学科卒中康复单元发挥了疗效,而证明急性期组织化卒中治疗有效的证据则较少。Gilliga根据以社区为基础的墨尔本东北部卒中发病率研究结果提出,如果患者所能得到的治疗均能最大化,卒中单元可使每1000个卒中患者中,死亡或依赖的患者减少46人,比tPA溶栓高40%(假定所以卒中患者均接受tPA治疗)^[42]。

虽然现在已得到共识,接受组织化卒中单元治疗的患者更有可能存活、出院回家、重获功能性独立,但仍不清楚卒中单元中究竟是什么元素导致这一结果。卒中单元实验协作组对29个临床试验进行了系统性综述,将卒中单元与普通病房的传统治疗进行了直接和间接的对比,以死亡、长期依赖作为终点。他们发现综合性急性、亚急性卒中单元、亚急性康复单元、混合性康复单元等均可使死亡及长期依赖显著减少,而结果趋向于急性半强化卒中单元有益^[43]。卒中单元因其治疗过程而临床结局较好^[44-45]。此外,有越来越多证据表明,看来是因为多学科卒中康复治疗环境使卒中单元获得成功。虽然现在还需要更多的研究证实,但卒中单元的成功看来更多是卒中康复治疗的结果,而不是急性期强化治疗。

综合性卒中康复单元比较昂贵,但是移动卒中小组又无法带来相同的益处^[46],并且,与普通内科病房相比,移动卒中小组在死亡率、依赖性 or 需长期住院治疗等方面没有什么影响^[47]。基于以上原因,Kalra对比了住卒中单元患者、住普通病房由卒中小组支持的患者,或居住在家中由特定家庭护理小组支持的患者之间的结局。与其他2组相比,卒中单元组在减少死亡率、减少长期住院方面更有效,卒中单元比另外2组花费更物有所值^[48]。对早期出院并获得支持的研究进行Meta分析提示,早期出院后由多学科小组提供支持的患者可更多获益,并只存在轻度残疾^[49]。

目前,有越来越多的学者达成共识,卒中后影响神经功能恢复的不仅有早前提到的脑的重组功能,还有脑组织对早期恢复的反应性、延迟康复等因素^[50]。因此,从康复角度来说,“时间就是脑”无疑是正确的。另外从动物实验得出的数据提示,

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使卒中单元患者处于积极的、刺激性的环境中是有益的,而这对于康复资源有限的区域则相对难度较大。而且,Yagura等证明,严重卒中患者尽管其皮质重组已缺乏物质基础,但看来仍能通过多学科小组的支持而最大程度获益,他们中的大多数能在出院时回归家庭^[51]。对卒中康复单元的严重患者来说,制定出院计划具有重要意义。最后,Paul等发现,通过对卒中后5年的患者的评估,20%的初发患者生活质量很低^[52]。为提高卒中后生存率、功能性结局,提高出院率,卒中康复的进一步研究重点应放在提高健康相关的生活质量上。

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