·指南·共识·解读·

中国神经病理性疼痛诊疗指南（2024版）

中国神经病理性疼痛诊疗指南制订专家组，中国老年保健协会疼痛病学分会
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【摘要】 神经病理性疼痛是临床常见病、多发病，严重影响患者生活质量，但神经病理性疼痛治疗是临床难点。本指南专家组依据国内外近10年来发表的神经病理性疼痛诊疗高质量循证医学研究证据，经严格论证和专家投票，对常见的神经病理性疼痛治疗方法形成推荐意见，旨在为神经病理性疼痛规范诊疗提供参考。

【关键词】 神经病理性疼痛；神经痛，带状疱疹后；三叉神经痛；痛性糖尿病周围神经病变；脊髓损伤后疼痛

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A Chinese guideline for the diagnosis and treatment of neuropathic pain (2024 edition)

Expert Group for the Development of Chinese Neuropathic Pain Diagnosis and Treatment Guidelines, Prepared by Society of Algology, Chinese Aging Well Association
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【Abstract】 Neuropathic pain is a common and frequently occurring disease in clinical practice, and seriously affects patients' quality of life. However, the treatment of neuropathic pain is a clinical challenge. Based on high quality evidence-based medical research on the diagnosis and treatment of neuropathic pain published domestically and internationally in the past 10 years, the expert group has formed recommendations for common treatment methods through rigorous argumentation and expert voting, to provide references for standardized diagnosis and treatment of neuropathic pain.

【Key words】 Neuropathic pain; Postherpetic neuralgia; Trigeminal neuralgia; Painful diabetic peripheral neuropathy; Spinal cord injury pain

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神经病理性疼痛(neuropathic pain, NP)是指损伤或疾病影响到躯体感觉神经系统引起的疼痛。NP通常是慢性的,疼痛持续存在或反复发作,给患者带来极大痛苦并造成功能障碍。多种影响外周或中枢神经系统的疾病,如神经退行性病变、自身免疫性疾病、代谢性疾病、血管性疾病、肿瘤、感染、中毒、创伤、遗传性疾病、不明原因的神经病变等,都有可能诱发NP。NP在普通人群中患病率为3.0%~17.0%[1]。

NP的治疗充满着挑战,是临床难点。我国疼痛学界提出了"关口前移,早期干预,预防敏化,防治慢痛"的原则,对提高临床NP诊疗水平,起到了积极的促进作用。为进一步提升NP规范化诊疗能力,提供有参考价值的规范化诊疗原则和实施方案,中国老年保健协会疼痛病学分会组织专家,经过反复讨论和认真研究,汲取国内外最新文献和专家推荐意见,制订了《中国神经病理性疼痛诊疗指南》。

指南制订方法

文献检索时限为2014年1月至2024年6月。中文检索词包括神经病理性疼痛、外周神经病理性疼痛、中枢神经病理性疼痛等,英文检索词包括neuropathic pain, peripheral neuropathic pain, central neuropathic pain等,系统检索了万方、知网、PubMed、Cochrane Library等国内外知名数据库,主要选择系统评价(systematic review)、Meta分析(Meta-analysis)、随机对照试验(randomized controlled trial, RCT)、专家共识(consensus)、临床指南(guideline)等高质量循证医学证据文献,采用推荐分级的评估、制定与评价(grading of recommendations assessment, development and evaluation, GRADE)分级系统证据质量分级及推荐强度(表1[2-4])和共识会议法,经过多次反复讨论,并进行在线投票,最终制订了本指南。

病理机制

NP机制复杂,至今尚未完全明了。研究表明,损伤和疾病导致的痛觉传导、调制通路和认知与情感相关脑区的病理可塑性改变在其中发挥重要作用[5]。在外周感觉神经,病理可塑性改变表现为背根神经节和三叉神经节神经元多种离子通道异常表

表1 GRADE系统证据质量分级及推荐强度说明

级别	说明
证据质量	
高质量(A)	非常有把握估计值接近真实值
中等质量(B)	对估计值有中等把握：估计值有可能接近真实值，但也有可能差别很大
低质量(C)	对估计值的把握有限：估计值可能与真实值有很大差别
极低质量(D)	对估计值几乎没有把握：估计值与真实值极大可能有很大差别
推荐强度	
强推荐(1)	大部分患者在此种情况下会选择使用推荐方案，只有少数患者不会；大多数医生应该接受干预措施；70%以上专家组成员赞成
弱推荐(2)	大部分患者在此种情况下会选择使用推荐方案，还有很多患者不会；医生亲自仔细查找证据或证据摘要，准备与患者就证据以及他们的价值观和意愿进行讨论；50%～70%专家组成员赞成
无明确推荐意见(3)	利弊相当；未确定目标人群；制订推荐意见的证据不足；50%以下专家组成员同意

达，如钠通道和钙通道上调，而钾通道下调，引起兴奋性异常升高和异位放电，导致痛觉超敏、痛觉过敏和自发性疼痛[6]；在中枢神经系统，从脊髓背角到感觉皮层各级水平痛觉传递都出现可塑性改变。初期为功能性改变，表现为兴奋性突触传递效率增强，即长时程增强（long-term potentiation, LTP），在后期出现形态学改变，即兴奋性突触数量增多，而抑制性突触数量减少，神经环路重塑[7]；痛觉调制系统可塑性改变导致下行抑制系统功能减弱，而下行易化系统活动增强[8]；认知和情感相关脑区（如海马和前额叶等）的功能和结构改变导致认知和情感障碍，而认知功能的改变又通过干扰痛觉调制系统，增强痛觉感受[9]。研究表明，神经炎症，即神经胶质细胞活化和致炎细胞因子（如TNF-α和IL-1β）过表达，介导慢性疼痛。致炎细胞因子通过调控多种离子通道的表达，引起神经元兴奋性异常升高，通过差异性调控不同脑区的突触可塑性，如分别上调和下调脊髓背角和海马体的兴奋性突触数量，引起慢性疼痛和认知/情感障碍。外周和中枢神经损伤引起的血-神经屏障和血-脑屏障的破坏，导致外周免疫细胞浸润到外周神经和脑实质是引起神经炎症的重要原因[10]。

常见NP疾病临床特点

一、外周神经病理性疼痛

1. 三叉神经痛

(1) 概述

三叉神经痛（trigeminal neuralgia, TN）分为原发性和继发性两类。原发性TN是临床上最常见的类型，又分为经典的TN（存在神经血管压迫）和特发性TN（未发现潜在原因）。继发性TN（存在潜在病理），又称症状性TN，是指由颅内外各种器质性病变引起的三叉神经继发性损害而致的TN。TN患病率为182/10万，年发病率为3～5/10万，多发生于成年及老年人[11]。

(2) 临床特点

发生在三叉神经分布区的阵发性剧烈疼痛，多为电击样、针刺样，历时数秒至数分钟，疼痛呈周期性，间歇期无症状。疼痛常由触及扳机点而诱发，且多发生于单侧，常见于上颌支和下颌支。发作严重时可伴有同侧面肌抽搐、面部潮红、流泪和流涎。

(3) 诊断

典型原发性TN ICHD-3β版诊断标准如下。

① 三叉神经1支或多支发作，无三叉神经外放射痛。

② 至少包含下列4项中的3项。

A. 发作性疼痛持续1 s～2 min。

B. 疼痛剧烈。

C. 电击样、闪电样、针刺样锐痛。

D. 患侧触发痛。

③ 无临床明显神经功能缺失。

④ 排除ICHD-3所列的其他诊断。

需符合①和②且至少3次以上单侧发作。

(4) 鉴别诊断

需与舌咽神经痛、牙痛、丛集性头痛、非典型性面痛、蝶腭神经痛、三叉神经区带状疱疹后神经痛、颞颌关节功能紊乱综合征、痛性眼肌麻痹综合征、冠心病等疾病相鉴别。

2. 带状疱疹后神经痛

(1) 概述

带状疱疹后神经痛（post herpetic neuralgia, PHN）是指带状疱疹皮疹愈合后持续1个月及以上的疼痛，是带状疱疹最常见的并发症[12]。PHN多见

于老年人，随年龄增加患病率增高[12]。

(2) 临床特点

PHN最常见的部位为胸背部，其次为头面部、颈部和腰背部，腰骶部发生率最低。患者疼痛范围往往与疱疹区域一致或扩大。PHN患者呈持续性疼痛，阵发性加重，疼痛性质多样，包括电击样、针刺样、烧灼样或刀割样痛。常出现自发痛、痛觉过敏、痛觉超敏、异常感觉等。

PHN患者常有焦虑、抑郁、睡眠差、生活质量下降等伴随症状。

(3) 诊断及鉴别诊断

诊断主要依据患者病史及临床表现，一般不需要其他特殊检查。PHN需与原发性TN、舌咽神经痛、枕神经痛、肋间神经痛、原发肿瘤压迫引起的疼痛等进行鉴别。

3. 痛性多神经病变

(1) 概述

痛性多神经病变(painful polyneuropathy)是指由多种原因，如代谢异常、自身免疫反应、家族遗传、感染性疾病引起，也可能是暴露于环境或职业毒素，或接受神经毒性药物治疗所致的多神经病变，并伴有疼痛症状的一类疾病[13]。常见的痛性多神经病变有痛性糖尿病周围神经病变(painful diabetic peripheral neuropathy, PDPN)、化疗致周围神经病变(chemotherapy-induced peripheral neuropathy, CIPN)、放疗后疼痛、术后/创伤后疼痛、HIV感染性痛性多神经病变等。PDPN患病率为8.0%～26.0%[14]，在2型糖尿病中更容易慢性化。CIPN患病率约为40.0%[15]。13.0%～50.0%的HIV患者可发生HIV感染性痛性多神经病变[16]。

(2) 临床特点

① PDPN常发生于四肢末端，足部多见，多呈持续性疼痛，常表现为针刺样、烧灼样、电击样疼痛，以静息痛和夜间痛为著。

② CIPN临床症状包括感觉障碍和神经性疼痛，如手脚对称性的痛感和麻木；刺痛感、烧灼感或电击样感觉，夜间为甚；常伴有肌肉无力，后期出现运动功能受损，如肌肉萎缩或协调障碍。

③ 放疗后疼痛是指对原发肿瘤或肿瘤转移进行放射治疗时，照射范围内神经、骨骼或软组织的直接或延迟性损害所致的疼痛，最常见的形式是辐射引起的慢性神经病变。

④ 术后或创伤后疼痛是指因手术或组织损伤(包括烧伤在内的各种创伤)而产生或加剧的疼痛。疼痛部位常位于手术范围或组织损伤区域之内，或相对应的神经支配区域，以及由躯体深部或内脏组织手术或损伤对应的皮节区域。

⑤ 其他痛性多神经病变，如HIV感染性痛性多神经病变，通常表现为长筒手袜套分布区域内的感觉异常性疼痛，主要影响脚和手部。维生素B族缺乏痛性多神经病变，临床表现主要是下肢烧灼样疼痛或麻木感，进行性加重，肌力下降甚至出现肌萎缩，严重影响行走。酒精性多神经病变患者常诉足底灼痛或麻木、发热感及腓肠肌痉挛性疼痛。

(3) 诊断标准

① PDPN　主要根据多伦多糖尿病神经病变专家组的诊断标准[17-18]。

A. 可能存在PDPN　糖尿病病史，PDPN相关症状，如肢体末端袜套样改变并伴疼痛。

B. 较大可能性PDPN综合考虑了两个或更多以下情况：神经性疼痛症状、远端感觉减退或踝腱反射减弱/消失。

C. 确诊为PDPN存在异常的神经传导检查。如果神经传导正常，则可行小纤维神经功能检查协助诊断。

② CIPN　没有特别明确的诊断标准，使用化疗药物，尤其以奥沙利铂或紫杉醇为主的化疗方案，更容易导致神经性疼痛，疼痛更严重，持续时间更长。建议使用棉签或木棒评估触觉，使用冷热物体评估温感，使用音叉试验评估振感。

③ 其他　无特殊标准，主要依据病史和临床特点进行诊断。如B族维生素缺乏常见于肥胖症、肿瘤等胃肠手术后以及长期慢性胃肠炎症等。酒精性多神经病变多见于慢性酗酒10年以上。

4. 外周神经损伤后神经病理性疼痛

(1) 定义

外周神经损伤后NP是由周围神经病变引起的持续性或复发性NP[13]。外周神经损伤多由牵拉损伤、卡压伤、切割伤等创伤引起，神经受损后的功能恢复不完全或恢复不良会导致NP。根据累及部位不同，外周神经损伤后NP分为幻肢痛、残肢痛、卡压综合征、臂丛神经损伤及其他神经干损伤等[19]。其

中残肢痛是截肢后肢体残端发生的疼痛，而幻肢痛是指患者肢体被截除后，仍感觉到被截除的肢体所发生的疼痛。外周神经损伤后NP的发病率为8.0%～26.0%[19-20]。

(2) 临床特点

外周神经发生损伤后导致的NP，病程持续时间长，临床表现复杂，如感觉受损、运动障碍、自主神经功能紊乱等。临床上多表现为神经支配区域的自发性疼痛、痛觉超敏、痛觉过敏、持续性疼痛或感觉异常。疼痛可表现为刀割样、闪电样、烧灼样、撕裂样、射击样、电击样、针刺样，表现各异，可为深在的或表浅的，多出现两种以上的疼痛性质。随活动、疲劳、精神紧张、环境或气候改变而加重。患者可出现肌肉痉挛、僵硬、无力、萎缩等症状。查体可见肌张力下降、肌肉萎缩以及腱反射减弱、消失、感觉异常等。即使原有病因去除、损伤愈合或得到有效控制，但疼痛仍迁延持续，严重影响患者生活质量，伴发情感障碍。

(3) 诊断

外周神经损伤后NP诊断主要依赖于详尽了解病史、系统的体格检查及必要的神经电生理检查等，尚无统一的诊断标准。目前主要采用的诊断标准如下[19,21]。

① 病史明确提示周围神经系统存在相关创伤史或疾病。

② 疼痛发作与创伤发生有明确的时间关联。

③ 疼痛区域符合躯体感觉神经的解剖分布。

④ 神经系统体格检查证实存在体征与神经损害或疾病相关。

⑤ 至少1项辅助检查证实躯体感觉系统存在相关损害或疾病。

5. 痛性神经根病

(1) 定义

痛性神经根病是一种以神经根病变引起周围神经病理性疼痛的疾病，由累及颈、胸、腰或骶神经根的病变或疾病引起的持续性或复发性疼痛，属于周围神经病理性疼痛。脊柱退行性改变是痛性神经根病最常见的原因，创伤、肿瘤、肿瘤性脑膜炎、感染、出血或缺血、糖尿病、类风湿性关节炎、医源性病变等也可引起痛性神经根病[13]。

(2) 临床特点

主要表现为相应的神经根支配区域自发痛、痛觉过敏、感觉异常，疼痛性质可为持续性或阵发性刀割样、烧灼样、撕裂样、电击样、针刺样，常引起功能紊乱。

(3) 诊断

诊断多依据病史、体格检查、评估量表、影像学、神经电生理等辅助检查以及诊断性治疗。

6. 舌咽神经痛

(1) 定义

舌咽神经痛(glossopharyngeal neuralgia, GN)是一种以短暂的发作性单侧疼痛为特征的疾病，疼痛性质为尖锐痛和刺痛，突然发作和停止，发生在舌咽神经分布区(下颌、耳朵、扁桃体窝和舌根)。有时累及迷走神经的咽支和耳支，疼痛主要由吞咽引发。舌咽神经痛年发病率约为0.7/100 000，随着年龄的增长而增加。

(2) 诊断标准

ICHD-3关于舌咽神经痛的诊断标准如下。

① 单侧舌咽神经分布区域的复发性、阵发性疼痛发作，应符合标准。

② 疼痛应具备以下所有特征。

A. 持续时间：疼痛持续几秒钟至约2 min。

B. 强度：重度。

C. 疼痛类型：尖锐痛、刺痛、射击或电击样感觉。

D. 诱发因素：咳嗽、打哈欠、吞咽或说话会诱发或加重疼痛。

③ 疼痛不能用任何其他ICHD-3诊断来解释。

(3) 鉴别诊断

诊断需要排除其他可能导致类似症状的疾病，如TN、颞动脉炎、颞下颌关节功能障碍等。临床上常应用咽部喷入局麻药诊断性阻滞协助鉴别诊断。

二、中枢性神经病理性疼痛

1. 脊髓损伤相关的中枢性神经病理性疼痛

(1) 定义

脊髓损伤相关的中枢性NP，简称为脊髓损伤后疼痛(spinal cord injury pain, SCIP)，是脊髓损伤常见的后遗症之一。SCIP分为两大类。

① 伤害感受性疼痛，又可分为肌肉骨骼疼痛和内脏疼痛。

② 神经病理性疼痛，又可分为损伤平面以上疼痛、损伤平面疼痛及损伤平面以下疼痛。大量研究表明大约2/3的脊髓损伤患者会发生SCIP。除了运

动功能障碍、括约肌功能障碍，SCIP往往是脊髓损伤患者的最大痛苦。

(2) 临床特点

① 肌肉骨骼疼痛是脊髓损伤后急性期最常出现的疼痛，疼痛发作多与肌肉收缩、肢体活动、体位变化有关，疼痛可放射传导至四肢和躯干。

② 脊髓损伤后的内脏疼痛主要表现为胸腔、腹腔或盆腔的疼痛，范围较弥散，定位不精确，性质多为钝痛、绞痛、隐痛等。多在脊髓损伤后数月或数年才出现，常呈间断性发生。

③ 脊髓损伤后引起的NP，常为剧烈的电击样、烧灼样、刀割样、针刺样疼痛，常合并束带样感觉异常。

(3) 诊断标准

① 既往有明确的脊髓损伤史，脊髓外伤、脊髓医源性损伤等。

② 至少1项辅助检查证实疼痛符合神经解剖范围。

③ 至少1项辅助检查证实存在相关的损害或疾病。

2. 大脑损伤相关的中枢性神经病理性疼痛

(1) 定义

慢性疼痛是创伤性脑损伤(traumatic brain injury, TBI)患者的常见后遗症，同时也是最常见的主诉之一。TBI患者慢性疼痛患病率超过50.0%，轻度TBI患者高达75.0%[22]。大多数情况下，慢性疼痛位于组织损伤的身体区域。有一些慢性疼痛位于非创伤部位或者与任何病理无关的身体某一部位，有可能是由中枢引起的，即“中枢性疼痛”[22]。TBI后慢性疼痛包括头痛、肌肉骨骼疼痛、中枢性疼痛等[23]。

(2) 临床特点

大脑损伤后慢性头痛有3种类型最为常见，即紧张性头痛、偏头痛及两者混合症状。头痛通常为中度疼痛，65.0%患者描述为双侧疼痛，限于额部，呈搏动性和压迫性的混合性头痛。中重度TBI患者中，约有12.0%可能出现复杂区域性疼痛综合征，主要表现为肢体痉挛。一些TBI患者会出现迟发性疼痛综合征，常在受伤后数周至数月内出现，多限于一侧身体，疼痛呈持续性、且阵发性加重。

(3) 诊断

依据脑外伤病史，结合典型的症状、体格检查及相关影像学检查即可诊断。

3. 卒中后中枢性疼痛

(1) 概述

卒中后中枢性疼痛(central post-stroke pain, CPSP)是指缺血性或出血性脑卒中后出现的与病灶有关的躯体疼痛与感觉异常。CPSP发生率为1.0%～12.0%[24]。CPSP多在脑卒中后3～6个月内发生。CPSP发展与感觉障碍密切相关。年轻、吸烟、抑郁及卒中的严重性是发生CPSP的高危因素[25]。

(2) 临床特点

疼痛部位常在中枢病变对侧肢体、面部或躯干，也会出现同侧偏身疼痛，但疼痛症状轻于对侧。疼痛性质呈烧灼样、针刺样、闪电样、压榨样、冰冻样、撕裂样。疼痛部位基本上与感觉异常分布一致。

(3) 诊断

主要根据卒中病史、疼痛史和异常感觉的症状，并排除其它疾病进行诊断。Klit等[26]推荐的CPSP诊断标准。

① 疼痛位于与中枢神经系统病灶相符的受累躯体部位。

② 有卒中病史，疼痛在卒中发生时或发生后出现。

③ 临床检查发现有与病灶相符的感觉障碍体征。

④ 神经影像显示相关病灶。

⑤ 排除其他可能疼痛的原因。

4. 多发性硬化相关的中枢性神经病理性疼痛

(1) 定义

多发性硬化(multiple sclerosis, MS)相关的中枢性NP是一种中枢神经系统的慢性炎症脱髓鞘性疾病。疼痛在MS中很常见，通常是由神经系统损伤引起的，多数为中枢性NP，少数为外周神经病理性疼痛或肌肉骨骼疼痛。50.0%～75.0% MS患者在病程的某个时间会出现慢性疼痛，有时疼痛可能是MS的首发症状。MS患者出现的疼痛类型通常与所受累及的神经系统有关。

(2) 临床特点

痛性麻木是MS中最常见的疼痛类型，45.0%患者存在这种类型的疼痛，常表现为持续烧灼样疼痛，高温或天气变化时加重，可伴有触诱发痛和痛觉过敏。疼痛通常为双侧，影响腿和足部，夜间更为严重，体力活动可加剧疼痛。原发进展性MS患者还会出现颈后、下背部或身体其他部位与颈部运动相关

的短暂的电击样、放射样疼痛，持续时间一般不到2 s，由弯曲颈部诱发，停止弯曲后可立即缓解。

(3) 诊断标准

MS诊断主要依据临床症状及辅助检查结果进行综合分析，并需要排除其他可能的疾病。

治　疗

一、治疗原则

NP是一个持续的过程，病情可能出现反复，需要长期治疗。NP治疗在安全、有效、经济的基础上，应遵循“关口前移、早期干预、预防敏化、防治慢痛”的原则，一般首选药物治疗，适时进行微创介入治疗，酌情配合一般治疗、物理治疗、中医治疗、心理治疗等。

二、治疗方法

1. 一般治疗

环境因素、情绪变化等均可加重NP，患者健康教育和自我管理很重要。教育患者要保持良好的生活习惯，避免熬夜和过度劳累，避免暴饮暴食、过度烟酒、过度辛辣食物等。指导患者自我调节情绪。坚持适当的运动，参加各种有益的社交活动，与医师建立良好的医患关系，加强医患的信任和尊重，鼓励患者参与治疗决策，更好地理解和接受治疗，使得治疗的依从性更好，有助于提高治疗效果。一般治疗的循证医学证据、质量分级及推荐强度见表2[27-29]。

表2 一般治疗的循证医学证据质量分级及推荐强度

证据	证据级别	推荐强度
健康教育[27]	A	1
自我管理[28-29]	A	1

2. 药物治疗

药物治疗是基础，应使用有效剂量的推荐药物[12]。联合治疗耐受性良好，可改善单药治疗疼痛控制欠佳患者的镇痛效果[30]。药物有效缓解疼痛后应避免立即停药，仍要维持治疗至少2周[12]。

(1) 常见药物分类

① 钙离子通道药物：主要代表药物有普瑞巴林(pregabalin)、加巴喷丁(gabapentin)、克利加巴林(crisugabalin)、美洛加巴林(mirogabalin)等。

② 钠离子通道药物：主要代表药物有卡马西平(carbamazepine)、奥卡西平(oxcarbazepine)、利多卡因(lidocaine)、草乌甲素(bulleyaconitine A)等。

③ 三环类抗抑郁药：主要代表药物有阿米替林(amitriptyline)、丙咪嗪、去甲丙咪嗪、去甲替林等，但几乎没有证据支持使用丙咪嗪[31]、去甲丙咪嗪[32]及去甲替林[33]治疗NP。

④ 五羟色胺和去甲肾上腺素再摄取抑制剂(selective serotonin and norepinephrine reuptake inhibitors, SNRIs)：主要代表药物有度洛西汀(duloxetine)、文拉法辛(venlafaxine)等。

⑤ 阿片类药物：主要代表药物有吗啡(morphine)、羟考酮(oxycodone)、芬太尼(fentanyl)、丁丙诺啡(buprenorphine)、他喷他多(tapentadol)、美沙酮(methadone)、氢吗啡酮(hydromorphone)等，但没有足够的证据支持或反驳吗啡[34]、芬太尼[35]、氢吗啡酮[36]对NP治疗有效。

⑥ A型肉毒杆菌毒素(botulinum toxin type A, BTX-A)和新型抗炎药汉防己甲素(tetrandrine)[37]可有效应用于NP的综合治疗。

⑦ 富血小板血浆(platelet rich plasma, PRP)[38]：神经周围PRP注射是缓解PDPN疼痛和麻木以及增强周围神经功能的有效疗法。

⑧ 其它药物：如曲马多(tramadol)、辣椒素贴剂(capsaicin patch)、NMDA受体拮抗剂(如氯胺酮、美金刚、美沙芬等)、大麻素(cannabinoids)、抗癫痫药(如拉莫三嗪、托吡酯等)、牛痘疫苗接种家兔皮肤炎症提取物、中成药(如颈舒颗粒[39]等)、糖皮质激素(glucocorticoids)、维生素、肌松药(如巴氯芬等)等。

(2) 常见NP治疗药物循证医学证据质量分级及推荐强度(表3[19, 40-143])。

(3) NP药物治疗推荐(表4[144-149])。

(4) TN药物治疗推荐(表5[95, 98])。

(5) 糖尿病性周围神经病理性疼痛药物治疗推荐[150](表6)。

(6) 中枢神经病理性疼痛药物治疗推荐[151](表7)。

3. 物理治疗

物理治疗是一种常见的非侵入性、非药物性的治疗手段，在NP治疗中有广泛应用，主要包括光生物调节疗法(photobiomodulation therapy, PBMT)、低强度激光疗法(low level laser therapy, LLLT)、经皮神经电刺激(transcutaneous electrical nerve stimulation, TENS)、扰频器疗法(scrambler therapy, ST)、体外冲

击波疗法(extracorporeal shockwave therapy, ESWT)、重复经颅磁刺激(repetitive transcranial magnetic stimulation, rTMS)[152-155]、经颅直流电刺激(transcranial direct electrical stimulation, tDCS)[153-156]、冷疗、全身振动(whole-body vibration, WBV)、瑜伽等[157-158](表8[61, 63, 111, 159-160, 162-214])。

4. 微创介入治疗

微创介入治疗是指应用CT、超声、数字减影血管造影(DSA)、C形臂等影像设备引导,以最小的切口路径和最少的组织损伤,实现对体内病灶的观察、诊断及治疗的技术,主要包括神经阻滞、神经毁损(化学性毁损和物理性毁损)、神经调控等,具体治疗方法有星状神经节阻滞(stellate ganglion block, SGB)、连续射频(continuous radiofrequency, CRF)、脉冲射频(pulsed radiofrequency, PRF)、脉冲联合连续

表5 三叉神经痛药物治疗推荐

治疗推荐	常用药物
一线治疗药物	卡马西平[95, 98]、奥卡西平[95, 98]
二线治疗药物	拉莫三嗪[95,98]、巴氯芬[95,98]、加巴喷丁[98]、普瑞巴林[98]

表6 糖尿病性周围神经病理性疼痛药物治疗推荐

治疗推荐	常用药物
一线治疗药物	度洛西汀、文拉法辛、阿米替林、普瑞巴林、加巴喷丁
二线治疗药物	曲马多、吗啡

注:国家药品监督管理局2024年已经批准克利加巴林和美洛加巴林用于治疗成人糖尿病性周围神经病理性疼痛

表7 中枢神经病理性疼痛药物治疗推荐

治疗推荐	常用药物
一线治疗药物	加巴喷丁、度洛西汀、三环类抗抑郁药
二线治疗药物	文拉法辛、普瑞巴林、拉莫三嗪、曲马多
三线治疗药物	美沙酮、羟考酮、大麻素

表3 常见神经病理性疼痛药物治疗循证医学证据质量分级及推荐强度

药物类别	药物名称	三叉神经痛	PHN	痛性多神经病变				脊髓损伤相关的中枢性神经痛	CPSP
				PDPN	CIPN	放疗后疼痛	术后/创伤后疼痛		
钙离子通道药物	普瑞巴林		A1[40-43]	A1[40, 44-50]	A1[51]	A1[52-54]	A1[55-58]	A1[19, 59-66]	A1[67-69]
	加巴喷丁	B2[70-73]	A1[42-43, 73-75]	A1[44, 49, 73, 76-79]	B1[80]	B1[52]		A1[19, 60-63, 65-66]	B1[69]
	克利加巴林		A1[81]	A1[82]					
	美洛加巴林		A1[83-84]	A1[85-90]	B1[91-92]		A1[19]	A1[19, 63, 93-94]	B1[94]
钠离子通道药物	卡马西平	A1[72, 95-99]		B2[100]					
	奥卡西平	A1[95, 98-99, 101-102]		B2[103-104]				B2[66, 105]	
	利多卡因	B2[96-97]	A1[106-107]					B2[63]	
三环类抗抑郁药	阿米替林			B2[44]				A1[62, 65-66, 108-109]	
SNRIs	度洛西汀			A1[44-45, 47, 49-50, 76, 104, 110]	A1[51, 111-113]		A1[114]	A1[62, 109, 115]	A1[116]
	文拉法辛			A1[44, 104]	A1[44]			B2[115]	
阿片类药物	丁丙诺啡		B2[117]	B2[118]					
NMDA受体拮抗剂	氯胺酮		B2[119]					B2[62-63]	
其它	BTX-A	B2[96, 101, 120-124]	B2[124-128]	B2[104, 129-130]				B2[62-63, 131-132]	
	8%辣椒素		B2[133-134]	B2[134-137]	B2[138]			B2[139]	
	拉莫三嗪	B2[140]						B2[62, 108]	B2[68,141]
	牛痘疫苗兔皮提取物		A1[142]	B2[143]					

注:PHN为带状疱疹后神经痛;PDPN为痛性糖尿病周围神经病变;CIPN为化疗后致周围神经病变;CPSP为卒中后中枢性疼痛;SNRIs为五羟色胺和去甲肾上腺素再摄取抑制剂;BTX-A为A型肉毒杆菌毒素

表4 神经病理性疼痛药物治疗推荐

治疗推荐	推荐药物
一线治疗药物	钙离子通道药物[144-148]、三环类抗抑郁药[144-148]、5-羟色胺-去甲肾上腺素再摄取抑制剂[144-148]、局部利多卡因[145, 148]
二线治疗药物	利多卡因贴剂[144, 146]、辣椒素高浓度贴剂[144-146]、曲马多[144,147-148]、肉毒杆菌毒素A[145]、强阿片类药物[147-149]
三线治疗药物	强阿片类药物[144-146]、肉毒杆菌毒素A[144]、曲马多[146]、大麻素[147]
四线治疗药物	美沙酮[147]、他喷他多[147]、外用利多卡因[147]、肉毒杆菌毒素[147]

射频（pulsed combined continuous radiofrequency, PCRF）、球囊压迫（percutaneous balloon compression, PBC）、脊髓电刺激（spinal cord stimulation, SCS）[215-216]、脑深部电刺激（deep brain stimulation, DBS）[217-218]、运动皮层电刺激（motor cortex stimulation, MCS）、周围神经刺激（peripheral nerve stimulation, PNS）、背根神经节电刺激（dorsal root ganglion stimulation, DRGS）、鞘内药物输注系统（intrathecal drug delivery system, IDDS）等（表9[125, 145, 168, 219-279]）。

5. 外科手术

针对NP的外科治疗方法主要为神经减压和神经毁损（表10[98, 238, 280-298]）。

表10 外科手术循证医学证据质量分级及推荐强度

疾病名称	治疗方法	证据级别	推荐强度
三叉神经痛	MVD[98, 238, 280-285]	A	1
	SRS[286-289]	A	1
舌咽神经痛	MVD[290]	B	2
	SRS[291-294]	A	2
PDPN	周围神经减压术[260, 295-298]	A	1

注：MVD为颅神经显微血管减压术；SRS为立体定向放射外科；PDPN为痛性糖尿病周围神经病变

（1）神经减压　主要包括颅神经显微血管减压术（microvascular decompression, MVD）、周围神经减压术等。

（2）神经毁损　主要包括立体定向放射外科

表8 物理治疗循证医学证据质量分级及推荐强度

治疗方法	三叉神经痛	PHN	痛性多神经病变				脊髓损伤相关的中枢性神经痛	CPSP
			PDPN	CIPN	术后/创伤后疼痛	痛性神经根病		
PBMT	B2[159]		B2[160]		B2[161]			
LLLT	B2[162-164]		B2[165]	B1[111]		B2[166]		
TENS	A1[167-168]	A2[169-170]	A1[171-172]	A2[173-174]	B2[175]	A2[176]	A2[61, 63, 177]	
ST				B2[174, 178-180]				
ESWT		B2[181-182]				B2[183]		
rTMS	B2[184]	B2[185-186]	B2[187-190]		A2[191-193]	B2[194]	A1[63, 195-199]	A2[200-204]
tDCS			B2[190, 205]		B2[191-192]		A1[61, 63, 197, 206-207]	B2[202-203]
冷疗				B2[208-209]				
WBV			B2[210-211]				B2[212]	
瑜伽				B2[213]		B2[214]		

注：PHN为带状疱疹后神经痛；PDPN为痛性糖尿病周围神经病变；CIPN为化疗后致周围神经病变；CPSP为卒中后中枢性疼痛；PBMT为光生物调节疗法；LLLT为低强度激光疗法；TENS为经皮神经电刺激；ST为扰频器疗法；ESWT为体外冲击波疗法；rTMS为重复经颅磁刺激；tDCS为经颅直流电刺激；WBV为冷疗、全身振动

表9 微创介入治疗循证医学证据质量分级及推荐强度

治疗方法	三叉神经痛	PHN	痛性多神经病变				脊髓损伤相关的中枢性神经痛	CPSP
			PDPN	CIPN	术后/创伤后疼痛	痛性神经根病		
神经阻滞		A1[219-222]				A1[223-224]		
PBC	A1[225-232]							
CRF	A1[228-230, 233-234]				A2[235-236]	B2[223]		
PRF	A1[234, 237-238]	A1[239-242]			A1[235, 243]	A1[244-247]		
PCRF	A1[233, 238, 248-250]							
SCS		A1[168, 251-254]	A1[145, 168, 255-260]	A1[261]	A1[262-265]		B2[266]	
DBS					B2[267]		B2[267]	A1[267-268]
MCS	B2[269]				B2[267, 270]			A2[168, 267, 269, 271]
PNS	B2[272-273]	A1[125]		B2[261]	A1[274-277]			
DRGS			B1[255]	B2[261]				B2[278]
IDDS							B2[279]	

注：PHN为带状疱疹后神经痛；PDPN为痛性糖尿病周围神经病变；CIPN为化疗后致周围神经病变；CPSP为卒中后中枢性疼痛；PBC为球囊压迫；CRF为连续射频；PRF为脉冲射频；PCRF为脉冲联合连续射频；SCS为脊髓电刺激；DBS为脑深部电刺激；MCS为运动皮层电刺激；PNS为周围神经刺激；DRGS为背根神经节电刺激；IDDS为鞘内药物输注系统

(stereotactic radiosurgery, SRS)、脊髓后正中点状切开术(punctate midline myelotomy, PMM)、脊髓背根入髓区(dorsal root entryzone, DREZ)毁损术、周围神经切断术等。

6. 中医治疗

基于辩证论治的理论,NP中医治疗主要有中医外治法和中医内治法,中医外治法主要包括针灸、电针、火针、浮针、梅花针、针刀、艾灸、手法治疗(推拿、按摩、刮痧、拔罐等)、穴位注射等,中医内治法主要包括中成药、草药等(表11[38, 271, 299-350])。

7. 心理治疗

心理治疗(psychotherapy)是指在医师与患者建立起良好治疗关系的基础上,由经过专业训练的医师运用专业的理论和技术,对患者进行治疗的过程。NP患者多合并精神心理问题,因而心理治疗是NP重要的治疗手段之一,可以缓解患者的心理压力和疼痛感受。常用的心理治疗方法主要有认知行为疗法(cognitive behavioral therapy, CBT)[145]、正念冥想(mindfulness meditation, MM)[158]、基于正念的认知疗法(mindfulness-based cognitive therapy, MBCT)、基于正念的减压疗法(mindfulness-based stress reduction, MBSR)、接受和承诺疗法(acceptance and commitment therapy, ACT)[351-352]、催眠疗法(hypnosis)[353-354]、芳香疗法(Aromatherapy)等(表12[355-364])。心理治疗也可以与其他治疗联合,以提高治疗效果。

表12 心理治疗循证医学证据质量分级及推荐强度

治疗方法	PHN	痛性多神经病变		
		PDPN	放疗后疼痛	术后疼痛
CBT		A1[355-356]		
MM	B2[357]	A1[358-359]		
MBCT		A1[356]		A1[360]
MBSR		B2[361]		
催眠疗法			B2[362]	
芳香疗法		B2[363-364]		

注:PHN为带状疱疹后神经痛;PDPN为痛性糖尿病周围神经病变;CBT为认知行为疗法;MM为正念冥想;MBCT为基于正念的认知疗法;MBSR为基于正念的减压疗法

利益冲突 所有作者均声明无利益冲突

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表11 中医治疗循证医学证据质量分级及推荐强度

治疗方法	三叉神经痛	PHN	痛性多神经病变			脊髓损伤相关的中枢性神经痛	CPSP
			PDPN	CIPN	痛性神经根病		
针灸	A1[299-302]	A1[303-305]	A1[306-308]	A1[309-313]	A1[314-316]	A2[317]	A2[271]
温针灸					A1[318-319]		
热敏灸		B2[320]			A2[321-322]		
电针	B2[323-324]	B1[325]		B2[326-327]	B2[328]		B2[271]
火针		B2[329-331]					
浮针		B2[332-333]					
梅花针		B2[334]					
针刀		B2[335]			B2[336]		
艾灸			B2[337]				
拔罐		B2[338]					
穴位注射		B2[339-340]					
穴位敷贴		B2[341]					
颈舒颗粒					B1[38]		
葛根素注射液			B2[342-343]				
黄芪桂枝五物汤					B2[344-345]		
血府逐瘀汤		B2[346-347]					
步阳环午汤			B2[348]				
身痛逐瘀汤			B2[349]				
芍药甘草汤		B2[350]					

注:PHN为带状疱疹后神经痛;PDPN为痛性糖尿病周围神经病变;CIPN为化疗后致周围神经病变;CPSP为卒中后中枢性疼痛

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