

8. 부록

부록 1. 검색전략

[국외]

- Medline

- 1.randomized controlled trial.mp. or exp Randomized Controlled Trial/
- 2.randomized controlled trial.pt.
- 3.controlled clinical trial.mp. or exp Controlled Clinical Trial/
- 4.controlled clinical trial.pt.
- 5.clinical trial.mp. or exp Clinical Trial/
- 6.clinical trial.pt.
- 7.or/1-6
- 8.limit 7 to humans
- 9.spine/ or coccyx/ or intervertebral disk/ or lumbar vertebrae/ or sacrum/ or spinal canal/ or exp back/ or facet joint/ or zygapophysial joint/ or sacroiliac.mp.
- 10.(spine or coccyx or intervertebral disk or lumbar vertebrae or sacrum or spinal canal or back or facet joint or zygapophysial joint or sacroiliac).tw.
- 11.spinal diseases/ or spinal osteophytosis/ or hyperostosis, diffuse idiopathic skeletal/ or spinal stenosis/ or spondylitis/ or spondylolisthesis/ or spondylolysis/
- 12.(spinal disease\$ or hyperostosis or spinal stenosis or spondyliti\$ or spondylolisthesis or spondylolysis).tw.
- 13.sciatica/ or radiculopathy/
- 14.exp BACK INJURIES/ or ((back or lumbar or sacrum or sacral) adj2 (wound\$ or injur\$ or trauma\$)).mp.
- 15.exp back pain/ or ((back or lumbar or sacrum or sacral) adj2 (pain\$ or ache\$ or aching)).mp.
- 16.or/9-15
- 17.8 and 16
- 18.exp injections/
- 19.((spine\$ or spinal\$ or nerv\$) adj7 block\$).mp.
- 20.medial branch block\$.mp.
- 21.facet joint injection\$.mp.
- 22.((intradisc\$ or intradisk\$) adj5 radiofrequenc\$).mp.
- 23.Injections, Epidural/
- 24.(epidural adj2 (corticosteroid\$ or steroid\$)).mp.
- 25.23 or 24
- 26.or/18-22
- 27.25 or 26

28.17 and 27

- Cochrane Database of Systematic Review

1. MeSH descriptor Spine explode all trees
2. spine:ti,ab,kw
3. MeSH descriptor Coccyx explode all trees
4. coccyx:ti,ab,kw
5. MeSH descriptor Intervertebral Disk explode all trees
6. (intervertebral disk):ti,ab,kw
7. MeSH descriptor Lumbar Vertebrae explode all trees
8. (lumbar vertebrae):ti,ab,kw
9. MeSH descriptor Sacrum explode all trees
10. sacrum:ti,ab,kw
11. MeSH descriptor Spinal Canal explode all trees
12. (spinal canal):ti,ab,kw
13. MeSH descriptor Back explode all trees
14. back:ti,ab,kw
15. (facet joint):ti,ab,kw
16. MeSH descriptor Zygapophyseal Joint explode all trees
17. (Zygapophyseal Joint):ti,ab,kw
18. MeSH descriptor Sacroiliac Joint explode all trees
19. sacroiliac:ti,ab,kw
20. (#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19)
21. MeSH descriptor Spinal Diseases explode all trees
22. (spinal disease*):ti,ab,kw
23. MeSH descriptor Spinal Osteophytosis explode all trees
24. (spinal osteophytosis):ti,ab,kw
25. MeSH descriptor Hyperostosis, Diffuse Idiopathic Skeletal explode all trees
26. Hyperostosis:ti,ab,kw
27. MeSH descriptor Spinal Stenosis explode all trees
28. (spinal stenosis):ti,ab,kw
29. MeSH descriptor Spondylitis explode all trees
30. spondyliti*:ti,ab,kw
31. MeSH descriptor Spondylolisthesis explode all trees
32. spondylolisthesis:ti,ab,kw
33. MeSH descriptor Spondylolysis explode all trees
34. spondylolysis:ti,ab,kw
35. (#21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR OR #32 OR #33 OR #34)

36. MeSH descriptor Sciatica explode all trees
37. sciatica:ti,ab,kw
38. MeSH descriptor Radiculopathy explode all trees
39. radiculopathy:ti,ab,kw
40. MeSH descriptor Back Injuries explode all trees
41. ((back OR lumbar OR sacrum OR sacral) NEAR/2 (wound* OR injur* OR trauma*)):ti,ab,kw
42. MeSH descriptor Back Pain explode all trees
43. ((back OR lumbar OR sacrum OR sacral) NEAR/2 (pain* OR ache* OR aching)):ti,ab,kw
44. (#36 OR #37 OR #38 OR #39 OR #40 OR #41 OR #42 OR #43)
45. (#20 OR #35 OR #44)
46. MeSH descriptor Injections explode all trees
47. ((spine* OR spinal* OR nerv*) NEAR/7 block*):ti,ab,kw
48. (medial branch block*):ti,ab,kw
49. ((intradisc* OR intradisk*) NEAR/5 radiofrequenc*):ti,ab,kw
50. (epidural NEAR/2 (corticosteroid* OR steroid*)):ti,ab,kw
51. (facet joint injection*):ti,ab,kw
52. (#46 OR #47 OR #48 OR #49 OR #50 OR #51)
53. (#45 AND #52)
54. (#53)

- EMBASE

1. 'randomized controlled trial'/exp OR 'randomized controlled trial'
2. 'randomized controlled trials'/exp OR 'randomized controlled trials'
3. 'randomized controlled trials as topic'/exp OR 'randomized controlled trials as topic'
4. #1 OR #2 OR #3
5. 'controlled clinical trial'/exp OR 'controlled clinical trial'
6. 'controlled clinical trials'/exp OR 'controlled clinical trials'
7. 'controlled clinical trials as topic'/exp OR 'controlled clinical trials as topic'
8. #5 OR #6 OR #7
9. 'clinical trial'/exp OR 'clinical trial'
10. 'clinical trials'/exp OR 'clinical trials'
11. 'clinical trials as topic'/exp OR 'clinical trials as topic'
12. #9 OR #10 OR #11
13. #4 OR #8 OR #12
14. #13 AND [humans]/lim
15. 'spine'/exp OR 'spine' OR 'coccyx'/exp OR 'coccyx' OR 'intervertebral disk'/exp OR 'intervertebral disk' OR 'lumbar vertebrae'/exp OR 'lumbar vertebrae' OR

'sacrum'/exp OR 'sacrum' OR 'spinal canal'/exp OR 'spinal canal'

16. 'back'/exp OR 'back' OR 'facet joint' OR 'zygapophysial joint' OR 'sacroiliac'

17. "spinal disease'/exp OR 'spinal disease' OR 'intervertebral disk displacement'/exp
OR 'intervertebral disk displacement' OR 'spinal osteophytosis'/exp OR 'spinal osteophytosis' OR 'hyperostosis diffuse idiopathic skeletal'/exp OR 'hyperostosis diffuse idiopathic skeletal' OR 'spinal stenosis'/exp OR 'spinal stenosis'
OR 'spondylitis'/exp OR 'spondylitis' OR 'spondylolisthesis'/exp
OR 'spondylolisthesis' OR 'spondylolysis'/exp OR 'spondylolysis'"

18. 'sciatica'/exp OR 'sciatica' OR 'radiculopathy'/exp OR 'radiculopathy'

19. 'back injuries'/exp OR 'back injuries'

20. (back OR lumbar OR sacrum OR sacral) NEAR/2 (wound* OR injur* OR trauma*)

21. 'back pain'/exp OR 'back pain'

22. (back OR lumbar OR sacrum OR sacral) NEAR/2 (pain* OR ache* OR aching)

23. #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22

24. #14 AND #23

25. 'injection'/exp OR 'injection' OR 'injections'/exp OR 'injections'

26. (spine* OR spinal* OR nerv*) NEAR/7 block*

27. 'medial branch block' OR 'medial branch blocks'

28. (intradisc* OR intradisk*) NEAR/5 radiofrequenc*

29. 'facet joint injection' OR 'facet joint injections'

30. 'epidural injection'/exp OR 'epidural injection' OR 'epidural injections'

31. epidural NEAR/2 injection*

32. #30 OR #31

33. epidural NEAR/2 (corticosteroid* OR steroid*)

34. #32 OR #33

35. #25 OR #26 OR #27 OR #28 OR #29 OR #34

36. #24 AND #35

[국내]

- Koreamed

Low back pain
 epidural injection*
 epidural steroid
 epidural corticosteroid
 facet joint injection
 medial branch block
 nerv* block
 radiofrequency
 spin* block

- 의학논문데이터베이스검색, 한국교육학술정보원, DBPIA, Koreanstudies Information Service System

요통 and 주사
 요통 and 고주파
 요통 and 신경차단
 방사통 and 주사
 방사통 and 고주파
 방사통 and 신경차단
 추간판 and 주사
 추간판 and 고주파
 추간판 and 신경차단

부록 2. 질평가 도구

Criteria	Operationalization of Criteria	Score
A. Was the method of randomization adequate?	A random (unpredictable) assignment sequence. An example of adequate methods is a computer generated random number table and use of sealed opaque envelopes. Methods of allocation using DOB, date of admission, hospital numbers, or alternation should not be regarded as appropriate.	Yes/No/Don't know
B. Was the treatment allocation concealed?	Assignment generated by an independent person not responsible for determining the eligibility of the patients. This person has no information about the persons included in the trial and has no influence on the assignment sequence or on the decision about eligibility of the patient.	Yes/No/Don't know
C. Were the groups similar at baseline regarding the most important prognostic factors? "Yes", if similar: • Age & gender • Description of type of pain • Intensity, duration or severity of pain	In order to receive a "yes", groups have to be similar in baseline regarding demographic factors, duration or severity of complaints, percentage of patients with neurologic symptoms, and value of main outcome measure(s).	Yes/No/Don't know
D. Was the patient blinded to the intervention?	The reviewer determines if enough information about the blinding is given in order to score a "yes": Use the author's statement on blinding, unless there is a differing statement/reason not to (no need for explicit information on blinding).	Yes/No/Don't know
E. Was the care provider blinded to the intervention?		Yes/No/Don't know
F. Was the outcome assessor blinded to the intervention?		Yes/No/Don't know
G. Were cointerventions avoided or similar?	Cointerventions should either be avoided in the trial design or similar between the index and control groups.	Yes/No/Don't know
H. Was the compliance acceptable in all groups?	The reviewer determines if the compliance to the interventions is acceptable, based on the reported intensity, duration, number and frequency of sessions for both the index intervention and control intervention(s).	Yes/No/Don't know
I. Was the drop-out rate described and acceptable? ≤15% drop out rate is acceptable.	The number of participants who are included in the study but did not complete the observation period or were not included in the analysis must be described and reasons given. If the percentage of withdrawals and drop-outs does not exceed 15% and does not lead to substantial bias, a "yes" is scored.	Yes/No/Don't know
J. Was the timing of the outcome assessment in all groups similar?	Timing of outcome assessment should be identical for all intervention groups and for all important outcome assessments.	Yes/No/Don't know
K. Did the analysis include an intention-to-treat analysis? "Yes" if less than 5% of randomized patients excluded.	All randomized patients are reported/analyzed in the group they were allocated to by randomization for the most important moments of effect measurement (minus missing values) irrespective of noncompliance and cointerventions.	Yes/No/Don't know

부록 3. 자료 추출 양식

Study ID			
1. Study Design			
연구설계	Prospective :	Control Group :	Randomization :
	Allocation Method		
추적기간			
연구국가			
2. Subjects			
대상환자	①급성요통(6주이하) ()	②아급성요통(6주-12주) ()	③만성요통(12주이상) ()
요통양상	① 비특이적 ()	②방사통 ()	③그외()
요통의 원인질환	①세분함 ()	②구별하지않음 ()	
선택기준	①의경우:추간판병변()척추관협착증() 척추후관절질환() 천장골관절질환() 근막동통증후군() 그 외 ()		
배제기준			
연구대상		Tx1 (Intervention)	Tx2 (Comparator)
	Recruit		
	withdraw		
	Analysis		
	f/u loss		
	남/여		
	연령(범위)		
3. Interventions			
		Tx1 (Intervention)	Tx2 (Comparator)
대상시술			
시술빈도 및 기간			
병용치료			
사용약제			
4. Results			
치료실패		Tx1 (Intervention)	Tx2 (Comparator)
	need for surgery (f/u 기간:)		
	drop out d/t tx failure		
통증평가: VAS	전/후(Mean±SD)	Baseline	Baseline
	차이(Mean±SD)		
Disability : ODI	전/후(Mean±SD)	Baseline	Baseline
	차이(Mean±SD)		
안전성 평가	adverse event		
5.remark			

부록 4. 문헌의 배제사유

국외논문

번호	배제문헌	배제사유
1	Dreyfuss, P., T. Henning, et al. (2009). "The ability of multi-site, multi-depth sacral lateral branch blocks to anesthetize the sacroiliac joint complex." Pain Medicine 10(4):679-688.	환자군이 대상이 아님 (건강자원자를 대상으로 생리적 효과를 보았음)
2	Dreyfuss, P., A. C. Schwarzer, et al. (1997) Specificity of lumbar medial branch and L5 dorsal ramus blocks: A computed tomography study. Spine 895-902	환자군이 대상이 아님 (건강자원자, cadaver를 대상으로 함)
3	Dreyfuss, P., B. D. Snyder, et al. (2008). "The ability of single site, single depth sacral lateral branch blocks to anesthetize the sacroiliac joint complex." Pain Medicine 9(7):844-850.	환자군이 대상이 아님 (건강자원자를 대상으로 생리적 효과를 보았음)
4	Rasmussen, S., D. S. Krum-Moller, et al. (2008). "Epidural steroid following discectomy for herniated lumbar disc reduces neurological impairment and enhances recovery: A randomized study with two-year follow-up." Spine 33(19):2028-2033.	환자군대상이 아님 (수술 후 환자만을 대상으로 함)
5	Rocco, A. G., E. Frank, et al. (1989). "Epidural steroids, epidural morphine and epidural steroids combined with morphine in the treatment of post-laminectomy syndrome." Pain 36(3):297-303.	환자군대상이 아님 (수술 후 환자만을 대상으로 함)
6	Sluijter, M. E., E. R. Cosman, et al. (1998) The effects of pulsed radiofrequency fields applied to the dorsal root ganglion: A preliminary report. Pain Clinic 109-117	환자군대상이 아님 (수술 후 환자만을 대상으로 함)
7	Barendse, G. A. M., F. Spaans, et al. (2001) Local denervation of lumbar paraspinal muscles may not be used as a criterion for the effectivity of radiofrequency lesions of the zygapophyseal joints. Pain Clinic 125-131	대상치료가 아님 (Radiofrequency)
8	Cohen, S. P., R. W. Hurlley, et al. (2008). "Randomized placebo-controlled study evaluating lateral branch radiofrequency denervation for sacroiliac joint pain." Anesthesiology	대상치료가 아님 (Radiofrequency)

109(2) : 279-288.		
9	Dobrogowski, J., A. Wrzosek, et al. (2005). "Radiofrequency denervation with or without addition of pentoxifylline or methylprednisolone for chronic lumbar zygapophysial joint pain." <i>Pharmacological Reports</i> 57(4):475-480.	대상치료가 아님 (Radiofrequency)
10	Ercelen, O., E. Bulutcu, et al. (2003). "Radiofrequency lesioning using two different time modalities for the treatment of lumbar discogenic pain: a randomized trial." <i>Spine</i> 28(17):1922-1927.	대상치료가 아님 (Radiofrequency)
11	Gallagher, J., P. L. Petriccione Di Vadi, et al. (1994). "Radiofrequency facet joint denervation in the treatment of low back pain: A prospective controlled double-blind study to assess its efficacy." <i>Pain Clinic</i> 7(3):193-198.	대상치료가 아님 (Radiofrequency)
12	Nath, S., C. A. Nath, et al. (2008). "Percutaneous lumbar zygapophysial (Facet) joint neurotomy using radiofrequency current, in the management of chronic low back pain: a randomized double-blind trial." <i>Spine</i> 33(12):1291-1297;discussion1298.	대상치료가 아님 (Radiofrequency)
13	Simopoulos, T. T., J. Kraemer, et al. (2008). "Response to pulsed and continuous radiofrequency lesioning of the dorsal root ganglion and segmental nerves in patients with chronic lumbar radicular pain." <i>Pain Physician</i> 11(2):137-144.	대상치료가 아님 (Radiofrequency)
14	Teixeira, A. and M. E. Sluijter (2006). "Intradiscal high-voltage, long-duration pulsed radiofrequency for discogenic pain: a preliminary report." <i>Pain Medicine</i> 7(5):424-428.	대상치료가 아님 (Radiofrequency)
15	Tekin, I., H. Mirzai, et al. (2007). "A comparison of conventional and pulsed radiofrequency denervation in the treatment of chronic facet joint pain." <i>Clinical Journal of Pain</i> 23(6):524-529.	대상치료가 아님 (Radiofrequency)
16	van Kleef, M., G. A. Barendse, et al. (1999). "Randomized trial of radiofrequency lumbar facet denervation for chronic low back pain." <i>Spine</i> 24(18):1937-1942.	대상치료가 아님 (Radiofrequency)
17	van Wijk, R. M. A. W., J. W. M. Geurts, et al. (2008). "Psychological predictors of substantial pain reduction after minimally invasive radiofrequency and injection treatments	대상치료가 아님 (Radiofrequency)

	for chronic low back pain." Pain Medicine 9(2):212-221.		
18	Birkenmaier, C., A. Veihelmann, et al. (2007). "Medial Branch Blocks Versus Pericapsular Blocks in Selecting Patients for Percutaneous Cryodestruction of Lumbar Facet Joints." Regional Anesthesia and Pain Medicine 32(1):27-33.	대상치료가 아님 (steroid 사용하지 않음)	
19	Bourne, I. H. (1984). "Treatment of chronic back pain. Comparing corticosteroid-lignocaine injections with lignocaine alone." Practitioner 228(1389):333-338.	대상치료가 아님 (deep fascia에 injection)	
20	Dreyfuss, P., B. Halbrook, et al. (2000). "Efficacy and validity of radiofrequency neurotomy for chronic lumbar zygapophysial joint pain." Spine 25(10):1270-1277.	대상치료가 아님 (Radiofrequency neurotomy)	
21	Glynn, C. and S. K. O (1996) A double-blind randomised comparison of the effects of epidural ine, lignocaine and the combination of clonidine and lignocaine in patients with chronic pain. Pain. 337-343	대상치료가 아님 (epidural catheter 사용)	
22	Kapural, L. (2008). "Intervertebral disk cooled bipolar radiofrequency (intradiskal biacuplasty) for the treatment of lumbar diskogenic pain: a 12-month follow-up of the pilot study." Pain Medicine 9(4):407-408.	대상치료가 아님 (intervertebral disk cooled bipolar radiofrequency)	
23	Manchikanti, L., V. Pampati, et al. (2005) The role of placebo and nocebo effects of perioperative administration of sedatives and opioids in interventional pain management. Pain Physician 349-355	대상치료가 아님 (시술 전 opioid 투여효과를 본 연구)	
24	Meizer, A. and R. Seibel (1999). "MRI-guided treatment of degenerative spinal diseases." Minimally Invasive Therapy and Allied Technologies 8(5):327-335.	대상치료가 아님 (local injection, RF or ethanol denervation)	
25	Sonne, M., K. Christensen, et al. (1985). "Injection of steroids and local anaesthetics as therapy for low-back pain." Scandinavian Journal of Rheumatology 14(4):343-345.	대상치료가 아님 (lilio lumbar ligament injection)	
26	Stanley, D., I. Stockley, et al. (1993). "A prospective study of diagnostic epidural blockade in the assessment of chronic back and leg pain." Journal of Spinal Disorders 6(3):208-211.	대상치료가 아님 (steroid 사용하지 않음)	
27	Rastogi, V., M. Krishna, et al. (1994). "Factors influencing the pain relief obtained with epidural methylprednisolone in low-back pain and sciatica." Pain Clinic 7(4):291-295.	Randomized controlled trial 아님 (Randomized 되어있지 않음)	

28	Cohen, S. P., M. P. Stojanovic, et al. (2008). "Lumbar zygapophysial (facet) joint radiofrequency denervation success as a function of pain relief during diagnostic medial branch blocks: a multicenter analysis." Spine Journal: Official Journal of the North American Spine Society 8(3):498-504.	Randomized controlled trial 아님 (retrospective study)
29	Eugene Mironer, Y. and J. J. Somerville (1998). "The current perception threshold evaluation in radiculopathy: Efficacy in diagnosis and assessment of the treatment results." Pain Digest 8(1):37-38.	Randomized controlled trial 아님 (retrospective study)
30	Kapural, L., N. Mekhail, et al. (2007). "Value of the magnetic resonance imaging in patients with painful lumbar spinal stenosis (LSS) undergoing lumbar epidural steroid injections." Clinical Journal of Pain 23(7):571-575.	Randomized controlled trial 아님 (retrospective study)
31	Lee, I. S., S. H. Kim, et al. (2007). "Comparison of the temporary diagnostic relief of transforaminal epidural steroid injection approaches: conventional versus posterolateral technique." Ajnr: American Journal of Neuroradiology 28(2):204-208.	Randomized controlled trial 아님 (retrospective study)
32	Miyamoto, H., M. Sumi, et al. (2008). "Clinical outcome of nonoperative treatment for lumbar spinal stenosis, and predictive factors relating to prognosis, in a 5-year minimum follow-up." Journal of Spinal Disorders & Techniques 21(8):563-568.	Randomized controlled trial 아님 (retrospective study)
33	Papageorgopoulos, P. J., H. G. Petrou, et al. (2001). "Treatment of lumbosacral radicular pain with epidural steroid injections." Orthopedics 24(2):145-149.	Randomized controlled trial 아님 (retrospective study)
34	Schaufele, M. K., L. Hatch, et al. (2006) Interlaminar versus transforaminal epidural injections for the treatment of symptomatic lumbar intervertebral disc herniations 414. Pain Physician 361-366	Randomized controlled trial 아님 (retrospective study)
35	Swerdlow, M. and W. Sayle-Creer (1970). "The use of extradural injections in the relief of lumbosciatic pain." Anaesthesia 25(1):128.	Randomized controlled trial 아님 (retrospective study)
36	Wang, J. C., E. Lin, et al. (2002). "Epidural injections for the treatment of symptomatic lumbar herniated discs." Journal of Spinal Disorders & Techniques 15(4):269-272.	Randomized controlled trial 아님 (retrospective study)
37	Campbell, M. J., L. Y. Carreon, et al. (2007). "Correlation of spinal canal dimensions to	Randomized controlled trial 아님

	efficacy of epidural steroid injection in spinal stenosis.[see comment]." Journal of Spinal Disorders & Techniques 20(2):168-171.	(대조군이 없음)
38	Cohen, S. P., S. A. Strassels, et al. (2009). "Outcome predictors for sacroiliac joint (lateral branch) radiofrequency denervation." Regional anesthesia and pain medicine 34(3):206-214.	Randomized controlled trial 아님 (대조군이 없음)
39	Galiano, K., A. A. Obwegeser, et al. (2007). "Ultrasound-guided versus computed tomography-controlled facet joint injections in the lumbar spine: a prospective randomized clinical trial." Regional Anesthesia & Pain Medicine 32(4):317-322.	Randomized controlled trial 아님 (대조군이 없음)
40	Luukkainen, R. (2007). "Periarticular corticosteroid treatment of the sacroiliac joint." Current Rheumatology Reviews 3(2):155-157.	Randomized controlled trial 아님 (대조군이 없음)
41	Manchikanti, L., V. Singh, et al. (2002). "Effectiveness of caudal epidural injections in discogram positive and negative chronic low back pain." Pain Physician 5(1):18-29.	Randomized controlled trial 아님 (대조군이 없음)
42	Richardson, J., N. Collinghan, et al. (2009). "Bilateral L1 and L2 dorsal root ganglion blocks for discogenic low-back pain." British Journal of Anaesthesia 103(3):416-419.	Randomized controlled trial 아님 (대조군이 없음)
43	Schiff, E. and E. Eisenberg (2003). "Can quantitative sensory testing predict the outcome of epidural steroid injections in sciatica? A preliminary study." Anesthesia & Analgesia 97(3):828-832.	Randomized controlled trial 아님 (대조군이 없음)
44	Shih, C., G. Y. Lin, et al. (2005). "Lumbar zygapophyseal joint injections in patients with chronic lower back pain." Journal of the Chinese Medical Association 68(2):59-64.	Randomized controlled trial 아님 (대조군이 없음)
45	Viiton, J. M., T. Rubino, et al. (1998). "Short-term evaluation of periradicular corticosteroid injections in the treatment of lumbar radiculopathy associated with disc disease." Revue du Rhumatisme (English Edition) 65(3):195-200.	Randomized controlled trial 아님 (대조군이 없음)
46	Ward, A., J. Watson, et al. (2002). "Glucocorticoid epidural for sciatica: metabolic and endocrine sequelae." Rheumatology 41(1):68-71.	Randomized controlled trial 아님 (대조군이 없음)
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32	오완수 외. 만성 디스크성 요통에서 교통지. 대한마취과학회지. 2002년 42권 1호 pp.83-88.	42권 1호 pp.83-88.	포함하고 있지 않음 (최장 추적기간 10주)
33	오흥근 외. 요통에 대한 신경차단. 진단과치료. Vol.4 No.3 [1984]		포함하고 있지 않음 (추적기간 10주)
34	유병훈 외. 요추부 신경근 차단술의 추적조사. 대한통증학회지. 1997년 10권 1호 pp.77-81.	10권 1호 pp.77-81.	포함하고 있지 않음 (추적기간 10주)
35	이동호 외. 요통에서의 신경차단술. 통증. 2001년 11권 0호		포함하고 있지 않음 (추적기간 10주)
36	이동호 외. 요추 추간판 탈출증의 예후 예측 인자로서 선택적 신경근 차단술의 유용성. 대한척추외과학회지. 2005년 12권 3호 pp.192-199.	대한척추외과학회지. 2005년 12권 3호 pp.192-199.	포함하고 있지 않음 (추적기간 10주)
37	이동호 외. 요추 추간판 탈출증 환자의 선택적 신경근 차단술 후. 대한척추외과학회지. 2004년 11권 4호 pp.216-222		포함하고 있지 않음 (추적기간 10주)
38	이상훈 외. 요추부 후관절성 척추 통증에 있어서 고주파 내측지 신경전리술의 효과. 대한영상의학회지. 2006년 55권 2호 pp.157-163	대한영상의학회지. 2006년 55권 2호 pp.157-163	포함하고 있지 않음 (추적기간 3개월)
39	이정곤 외. 요통환자에서 경막외 주사요법의 장기효과에 대한 고찰. 대한재활의학회지. 1999년 23권 2호 pp.365-370.	대한재활의학회지. 1999년 23권 2호 pp.365-370.	포함하고 있지 않음 (추적기간 4주)
40	이정은 외. 요추 추간판 탈출증 치료 시 경막외 주사와 척추감압기 병용 시의 효과 비교. 대한재활의학회지. 2007년 31권 5호 pp.590-595.	대한재활의학회지. 2007년 31권 5호 pp.590-595.	포함하고 있지 않음 (추적기간 4주)
41	이종우 외. 경피적 척추 주사 요법: 치료 효과 개선을 위한 고찰. 대한영상의학회지. 2005년 52권	대한영상의학회지. 2005년 52권	포함하고 있지 않음 (추적기간 4주)

	4호 pp.255-263.		(후향적 연구)
42	이태훈 외. 요통환자에서 복합 신경차단술의 효과. Journal of Korean Neurosurgical Society. 2003년 34권 2호 pp.110-114	후관절 주사요법의 효과. Journal of Korean Neurosurgical Society. 2003년 34권 2호 pp.110-114	무작위배정 임상연구가 아님 (후향적 연구)
43	임경준 외. 임상연구 : 고주파 척추후관절 신경근절제술을 이용한 요통 치료: 단기적 추적 관찰. 대한마취과학회. 대한마취과학회지. 2005년.	고주파 척추후관절 신경근절제술을 이용한 요통 치료: 단기적 추적 관찰. 대한마취과학회. 대한마취과학회지. 2005년.	6개월 이상의 추적관찰 성과변수를 포함하고 있지 않음 (최장 추적기간 3개월)
44	장재호 외. 요통 환자에서 카이로프랙틱 수기치료와 경막외 주사요법의 비교. 고신대학교 의과대학 학술지. 2006년 21권 1호 pp.69-75.	카이로프랙틱 수기치료와 경막외 주사요법의 비교. 고신대학교 의과대학 학술지. 2006년 21권 1호 pp.69-75.	6개월 이상의 추적관찰 성과변수를 포함하고 있지 않음 (추적기간 불명확, 평균 10주)
45	장철형 외. 추간판 내장증의 치료. 계명의대논문집 1999년 18권 3호 pp.428-438.	추간판 내장증의 치료. 계명의대논문집 1999년 18권 3호 pp.428-438.	무작위배정 임상연구가 아님 (대조군이 없음)
46	정성문 외. 군병원에서 요통 환자에 대한 경막외 스테로이드 주사요법의 효과. 대한근지인과학술지 2003년 34권 1호 pp.45-54.	군병원에서 요통 환자에 대한 경막외 스테로이드 주사요법의 효과. 대한근지인과학술지 2003년 34권 1호 pp.45-54.	6개월 이상의 추적관찰 성과변수를 포함하고 있지 않음 (최장 추적기간 2주)
47	조동익 외. 급성 요통 환자에서 초기 주사 요법으로 척추 후관절 주사요법의 효과. 경희의학 2007년 23권 1호 pp.30-35.	급성 요통 환자에서 초기 주사 요법으로 척추 후관절 주사요법의 효과. 경희의학 2007년 23권 1호 pp.30-35.	6개월 이상의 추적관찰 성과변수를 포함하고 있지 않음 (최장 추적기간 1주)
48	조영우 외. 만성 방사통에서 경추간공 신경근 차단과 경막외 스테로이드 주입의 병행 효과. 대한마취과학회지. 2005년 48권 1호 pp.50-56.	만성 방사통에서 경추간공 신경근 차단과 경막외 스테로이드 주입의 병행 효과. 대한마취과학회지. 2005년 48권 1호 pp.50-56.	무작위배정 임상연구가 아님 (후향적 연구)
49	조훈, 하성곤, 김세훈, 임동준, 박정율, 서중근. 만성 요통에 대한 경피적 고주파신경차단술의 예후인자. 노인병. 2002년 6권 2호 pp.155-163.	만성 요통에 대한 경피적 고주파신경차단술의 예후인자. 노인병. 2002년 6권 2호 pp.155-163.	무작위배정 임상연구가 아님 (후향적 연구)
50	최윤숙 외. 수술 후 발생한 극심한 요통환자에서 후지내측지 신경차단 치료. 대한마취과학회지. 2009년 56권 5호 pp.574-577	수술 후 발생한 극심한 요통환자에서 후지내측지 신경차단 치료. 대한마취과학회지. 2009년 56권 5호 pp.574-577	무작위배정 임상연구가 아님 (Case report)
51	홍영기 외. 선택적 척추신경근 차단술을 통한 방사통의 치료. 대한정형외과학회지. 1997년 32권 4호 pp.1056-1062.	선택적 척추신경근 차단술을 통한 방사통의 치료. 대한정형외과학회지. 1997년 32권 4호 pp.1056-1062.	무작위배정 임상연구가 아님 (후향적 연구)

비교시술이 아니라 제외된 것

번호	배제문헌	배제사유
1	Gallucci, M., N. Limbucci, et al. (2007). "Sciatica: treatment with intradiscal and intraforaminal injections of steroid and oxygen-ozone versus steroid only." Radiology 242(3): 907-913.	비교시술이 아님 (intradiscal and intraforaminal injection로 두가지 주사치료를 시행)
2	Jeong, H. S., J. W. Lee, et al. (2007). "Effectiveness of transforaminal epidural steroid injection by using a preganglionic approach: a prospective randomized controlled study." Radiology 245(2): 584-590.	비교시술이 아님 (비교군에도 steroid 사용)
3	McGregor, A. H., N. K. Anjarwalla, et al. (2001). "Does the method of injection alter the outcome of epidural injections?" Journal of Spinal Disorders 14(6): 507-510.	비교시술이 아님 (비교군에도 steroid 사용)
4	Revel, M., G. R. Auleley, et al. (1996). "Forceful epidural injections for the treatment of lumbosciatic pain with post-operative lumbar spinal fibrosis." Revue du Rhumatisme (English Edition) 63(4): 270-277.	비교시술이 아님 (비교군에도 steroid 사용)
5	Ackerman, W. E. and M. Ahmad (2007) The efficacy of lumbar epidural steroid injections in patients with lumbar disc herniations. Anesthesia and analgesia 1217-1222	비교시술이 아님 (비교군에도 steroid 사용)
6	Thomas, E., C. Cyteval, et al. (2003). "Efficacy of transforaminal versus interspinous corticosteroid injection in discal radiculalgia - a prospective, randomised, double-blind study." Clinical Rheumatology 22(4-5): 299-304.	비교시술이 아님 (비교군에도 steroid 사용)
7	Candido, K. D., M. S. Raghavendra, et al. (2008) "A prospective evaluation of iodinated contrast flow patterns with fluoroscopically guided lumbar epidural steroid injections: the lateral parasagittal interlaminar epidural approach versus the transforaminal epidural approach." Anesthesia and analgesia 638-644	비교시술이 아님 (비교군에도 steroid 사용)

부록 5. 물리치료, 수술 코드 및 진통제(마약성/비마약성) 코드

1. 물리치료 및 국소 주사치료 코드 (2009년 1월판 건강보험요양급여비용 기준)

코드	처치
MM010	표층열치료 Superficial Heat Therapy
MM011	한냉치료
MM012	Cold therapy
	콜드팩 Cold Pack
	냉동치료 Cryotherapy
MM020	심층열치료 Deep Heat Therapy
MM030	자외선치료 UV Ray Irradiation
MM070	경피적 전기신경자극치료(Transcutaneous Electrical Nerve Stimulation)
MM080	
MM090	맞사지치료 Massage Therapy
MM101	단순운동치료 Simple Therapeutic Exercise
MM041	
MM043	수치료
MM049	Hydrotherapy
MM046	
	증기욕치료 Steam Bathing
	정규욕조치료 Regular Tube
	대조욕치료 Contrast Bath
	하버드탱크 치료 Hubbard Tank
MM052	간헐적 견인치료
	Intermittent Traction Therapy
	골반견인 Pelvic Traction
MM060	전기자극치료 Electrical Stimulation Therapy
MM085	재활저출력레이저치료 Laser Therapy
MM102	복합운동치료 Complex
MM103	등속성 운동치료 Isokinetic
MM161	운동점차단술 Motor Point Block
MM190	압박치료 Pneumatic Compression
MX121	이온삼투요법 Iontophoresis
MM151	기능적전기자극치료 (Functional Electrical Stimulation Therapy)
MM300	적외선치료 Infra Red Ray Irradiation

2. 요통 관련 수술 코드 (2009년 1월판 건강보험요양급여비용 기준)

코드	수술 종류
척추변형에 척추관절고정 (Arthrodesis for Spinal Deformity)	
전방고정 Anterior Technique	
N0444	7구간(척추분절) 미만
N0445	7구간(척추분절) 이상
후방고정 Posterior Technique	
N0446	7구간(척추분절) 미만
N0447	7구간(척추분절) 이상
척추체제거술 Vertebral Corpectomy	
N0453	요추 Lumbar Spine
척추고정술 (Arthrodesis of Spine)	
N0466	(전방고정) 요추 Lumbar Spine
N0469	(후방고정) 요추 Lumbar Spine
추간판제거술 [척추후궁절제술 포함] Discectomy	
N1493	(관혈적 Invasive) 요추 Lumbar Spine
N1494	내시경하 by Endoscopy
N1495	척추수핵용해술 (Injection Procedure for Chemonucleolysis)
N1496	척추수핵흡인술 [뉴크레오톨이용 수핵제거 등] (Aspiration Procedure of Nucleus Pulposus of Intervertebral Disk)
척추후궁절제술 Laminectomy	
N1499	요추 Lumbar Spine

3. 진통제 성분

가. 비마약성 진통제

(식약분류는 식약청 분류번호에 관한 규정에 의한 분류번호를 의미함)

식약분류	성분코드	제품코드	
114	100901ACH	aceclofenac	100mg
114	100901ACS	aceclofenac	100mg
114	100901ATB	aceclofenac	100mg
114	101001ACH	acemetacin	60mg
114	101303ATB	acetaminophen	300mg
114	101304AEL	acetaminophen	32mg
114	101305ATB	acetaminophen	500mg
114	101401ATB	acetaminophenencapsulated(asacetaminophen)	160mg
114	101402ATR	acetaminophenencapsulated	325mg
114	101403ASS	acetaminophenencapsulated	32mg
114	101404ATB	acetaminophenencapsulated(asacetaminophen)	325mg
114	101405ATR	acetaminophenencapsulated	650mg
114	101406ATB	acetaminophenencapsulated(asacetaminophen)	80mg
114	101408ATB	acetaminophenencapsulated(asacetaminophen)	500mg
114	105301ATB	alminoprofen	150mg
114	105302ATB	alminoprofen	300mg
114	106601ACH	amfenacsodium	50mg
114	110701ATB	aspirin	100mg
114	110702ATB	aspirin	500mg
114	110801ATB	aspirinencapsulated	100mg
114	110802ATB	aspirinencapsulated	500mg
114	112101ATB	auranofin	3mg
114	133801ATB	cinnoxicam	15mg
114	136601ATB	clonixinlysinate	125mg
114	136603ATB	clonixinlysinate	250mg
114	142301ACS	dexibuprofen	300mg
114	142301ATB	dexibuprofen	300mg
114	142301ATR	dexibuprofen	300mg
114	142302ATB	dexibuprofen	150mg
114	142303ATB	dexibuprofen	400mg
114	142304ASY	dexibuprofen	12mg
114	143401ATB	diclofenacpotassium	25mg
114	143402ATB	diclofenacpotassium	50mg
114	143501ATR	diclofenacsodium	100mg
114	143504ATB	diclofenacsodium	25mg
114	143506ATB	diclofenacsodium	50mg
114	151501ATB	emorfazone	200mg
114	156601ATB	etodolac	100mg
114	156602ACH	etodolac	200mg
114	156602ATB	etodolac	200mg
114	156603ATB	etodolac	400mg
114	156603ATR	etodolac	400mg
114	156604ATR	etodolac	600mg
114	157801ACH	fenoprofencalcium	200mg
114	157802ACH	fenoprofencalcium	300mg
114	157803ATB	fenoprofencalcium	600mg

114	160301ACH	flufenamicacid	100mg
114	160301ATB	flufenamicacid	100mg
114	161902ATB	flurbiprofen	40mg
114	172801ATB	ibuprofen	100mg
114	172802ACH	ibuprofen	200mg
114	172802ACS	ibuprofen	200mg
114	172802ATB	ibuprofen	200mg
114	172804ASY	ibuprofen	20mg
114	172806ATB	ibuprofen	400mg
114	172807ATB	ibuprofen	600mg
114	172807ATR	ibuprofen	600mg
114	172811ASY	ibuprofen	40mg
114	172901ATB	ibuprofen	400mg
114	173502ATB	imidazolesalicylate	750mg
114	179703ACH	ketoprofen	25mg
114	180001ATB	ketorolactromethamine	10mg
114	185001ATB	lonazolacalcium	200mg
114	186101ATB	loxoprofensodium	60mg
114	189001ACH	mefenamicacid	250mg
114	189001ATB	mefenamicacid	250mg
114	189003ATB	mefenamicacid	500mg
114	189701ACH	meloxicam	7.5mg
114	189701ATB	meloxicam	7.5mg
114	189702ACH	meloxicam	15mg
114	198101ASS	nabumetone	33.33mg
114	198102ATB	nabumetone	500mg
114	198103ASS	nabumetone	50mg
114	199401ATR	naproxen	1000mg
114	199404ATE	naproxen	500mg
114	199501ATB	naproxensodium	275mg
114	201801ATB	nimesulide	100mg
114	206101ATB	oxaprozin	200mg
114	210501ATB	pentazocineHCl	25mg
114	214001ACH	piroxicam	10mg
114	214001ATB	piroxicam	10mg
114	214004ACH	piroxicam	20mg
114	214004ATB	piroxicam	20mg
114	214201ATB	piroxicam β -cyclodextrin	191.2mg
114	214202ATB	piroxicam β -cyclodextrin	95.6mg
114	216501ASY	pranoprofen	15mg
114	216503ASY	pranoprofen	7.5mg
114	216504ATB	pranoprofen	75mg
114	218601ACH	proglumetacinmaleate	150mg
114	218602ATB	proglumetacinmaleate	300mg
114	218603ACH	proglumetacinmaleate	75mg
114	221301ACH	pyrazinobutazone	300mg
114	225901ATB	salsalate	500mg
114	233201ATB	sulindac	100mg
114	233203ATB	sulindac	200mg
114	234401ATB	talniflumate	370mg
114	235301ATB	tenoxicam	10mg
114	238901ATB	tiaprofenicacid	200mg
114	241501ACH	tolfenamicacid	100mg
114	241502ACH	tolfenamicacid	200mg

114	242301ACR	tramadolHCl	100mg
114	242301ATR	tramadolHCl	100mg
114	242302ATR	tramadolHCl	150mg(1회/1일)
114	242304ATR	tramadolHCl	200mg(1회/1일)
114	242305ACH	tramadolHCl	50mg
114	242305ATB	tramadolHCl	50mg
114	242306ATR	tramadolHCl	300mg(1회/1일)
114	242307ATR	tramadolHCl	100mg(1회/1일)
114	249901ATB	zaltoprofen	80mg
114	251900ATB	diclofenacsodium	50mg
114	347701ACH	celecoxib	200mg
114	355501ATB	lornoxycam	8mg
114	355503ATB	lornoxycam	4mg
114	363601ATB	ibuprofenencapsulated	200mg
114	363602ATB	ibuprofenencapsulated	400mg
114	430600ATB	acetaminophen	325mg
114	430600ATB	tramadolHCl	37.5mg
114	433000ATB	acetaminophen	325mg
114	458402ATB	morniflumate	350mg
114	480600ATB	acetaminophen	162.5mg
114	480600ATB	tramadolHCl	18.75mg
114	493401ATB	pelubiprofen	30mg
114	499401ATB	almotriptanmaleate(asalmotriptan12.5mg)	17.5mg
122	131701ATB	chlorphenesincarbamate	125mg
122	131702ATB	chlorphenesincarbamate	250mg
122	138701ATB	cyclobenzaprineHCl	10mg
122	138702ACR	cyclobenzaprineHCl	15mg
122	138703ACR	cyclobenzaprineHCl	30mg
111	157001BIJ	etomidate	20mg
111	179501BIJ	ketamineHCl	200mg
111	179502BIJ	ketamineHCl	500mg
111	179503BIJ	ketamineHCl	100mg
111	179504BIJ	ketamineHCl	250mg
111	219801BIJ	propofol	1000mg
111	219802BIJ	propofol	120mg
111	219803BIJ	propofol	200mg
111	219804BIJ	propofol	500mg
111	219805BIJ	propofol	100mg
111	219806BIJ	propofol	150mg
111	313500BIJ	sodiumcarbonate	30mg
111	313500BIJ	thiopentalsodium	500mg
111	482201BIJ	thiopentalsodium	265mg
114	101308BIJ	acetaminophen	1g
114	110902BIJ	aspirinlysine	900mg
114	120202BIJ	buprenorphineHCl	300 μ g
114	121101BIJ	butorphanoltartrate	1mg
114	121102BIJ	butorphanoltartrate	2mg
114	142001BIJ	dexamethasonepalmitate	4mg
114	143502BIJ	diclofenacsodium	75mg
114	143601BIJ	diclofenac- β -dimethyl-aminoethanol	90mg
114	171501BIJ	hydroxocobalamin	2.5mg
114	171502BIJ	hydroxocobalamin	5mg
114	179701BIJ	ketoprofen	100mg
114	180002BIJ	ketorolactromethamine	30mg

114	198901BIJ	nalbuphineHCl	10mg
114	198902BIJ	nalbuphineHCl	20mg
114	199501BIJ	naproxensodium	275mg
114	210502BIJ	pentazocineHCl	30mg
114	214002BIJ	piroxicam	20mg
114	214101BIJ	piroxicampotassium	22.3mg
114	214102BIJ	piroxicampotassium	34.45mg
114	219401BIJ	propacetamolHCl	1g
114	235302BIJ	tenoxicam	20mg
114	242301BIJ	tramadolHCl	100mg
114	242303BIJ	tramadolHCl	50mg
114	245201BIJ	trometamoltiapropfenate	293mg
114	313600BIJ	calciumbromide	400mg
114	313600BIJ	dextrose	2g
114	313600BIJ	sodiumsalicylate	500mg
114	355502BIJ	lornoxycam	8mg
114	101302CSP	acetaminophen	125mg
114	172803CSP	ibuprofen	50mg

나. 마약성 진통제

식약분류	성분코드	제품코드	
821	158201CPC	fentanyl	2.5mg
821	158202CPC	fentanyl	5mg
821	158203CPC	fentanyl	4.2mg
821	158204CPC	fentanyl	8.4mg
821	158205CPC	fentanyl	2.1mg
821	158206CPC	fentanyl	12.6mg
821	158207CPC	fentanyl	16.8mg
811	137703ATB	codeinephosphate	20mg
811	144901ATR	dihydrocodeinetratartrate	60mg
811	197301ACR	morphinesulfate	10mg
811	197301ATR	morphinesulfate	10mg
811	197302ACR	morphinesulfate	30mg
811	197302ATR	morphinesulfate	30mg
811	197305ATB	morphinesulfate	15mg
811	313200ATB	acetaminophen	500mg
811	313200ATB	hydrocodonebitartrate	7.5mg
811	313400ACH	codeinephosphate	10mg
811	313400ACH	ibuprofen	200mg
811	313400ACH	paracetamol	250mg
811	359001ATR	oxycodoneHCl	40mg
811	359002ATR	oxycodoneHCl	10mg
811	359003ATR	oxycodoneHCl	20mg
811	441102ATB	hydromorphoneHCl	2mg
811	441103ATB	hydromorphoneHCl	4mg
811	441106ATR	hydromorphone HCl	8.72mg
811	441107ATR	hydromorphone HCl	16.35mg
811	441108ATR	hydromorphoneHCl	32mg
811	441109ATR	hydromorphone HCl	64mg
821	158305ATD	fentanylcitrate(asfentanyl)	200 μ g
821	158306ATD	fentanylcitrate(asfentanyl)	400 μ g
821	158307ATD	fentanylcitrate(asfentanyl)	600 μ g

821	158308ATD	fentanyl citrate(asfentanyl)	800 μ g
821	158309ATD	fentanyl citrate(asfentanyl)	1200 μ g
821	158310ATD	fentanyl citrate(asfentanyl)	1600 μ g
821	359004ATB	oxycodoneHCl	5mg
821	359007ATR	oxycodoneHCl	80mg
821	380500ATB	acetaminophen	325mg
821	380500ATB	oxycodoneHCl	5mg
821	440600ACH	acetaminophen	500mg
821	440600ACH	oxycodoneHCl	5mg
811	197201BIJ	morphineHCl	10mg
811	197202BIJ	morphineHCl	5mg
811	197301BIJ	morphinesulfate	10mg
811	197303BIJ	morphinesulfate	20mg
811	197304BIJ	morphinesulfate	5mg
811	197305BIJ	morphinesulfate	15mg
811	197306BIJ	morphinesulfate	1mg
811	197307BIJ	morphinesulfate	50mg
811	197308BIJ	morphinesulfate	8mg
811	441101BIJ	hydromorphoneHCl	1mg
811	441102BIJ	hydromorphoneHCl	2mg
811	441105BIJ	hydromorphoneHCl	10mg
821	104701BIJ	alfentanilHCl	1.088mg
821	104703BIJ	alfentanilHCl	2.72mg
821	158301BIJ	fentanyl citrate	1000 μ g
821	158302BIJ	fentanyl citrate	100 μ g
821	158303BIJ	fentanyl citrate	500 μ g
821	158304BIJ	fentanyl citrate	50 μ g
821	158311BIJ	fentanyl citrate	1500 μ g
821	211501BIJ	pethidineHCl	50mg
821	211502BIJ	pethidineHCl	25mg
821	232502BIJ	sufentanil citrate	375 μ g
821	232503BIJ	sufentanil citrate	75 μ g
821	457601BIJ	remifentanilHCl(asremifentanil1mg)	1.1mg
821	457602BIJ	remifentanilHCl(asremifentanil2mg)	2.21mg
821	457603BIJ	remifentanilHCl(asremifentanil5mg)	5.53mg