

Systematic Review

The Effectiveness of Intraarticular Cervical Facet Steroid Injections in the Treatment of Cervicogenic Headache: Systematic Review and Meta-analysis

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Background: Cervicogenic headache (CGH) can often be difficult to treat, given the overlapping clinical features of other headaches and the varying sources of pain that patients report. While imaging is not useful in diagnosing CGH, anesthetic blockade of the atlanto-occipital joint, lateral atlantoaxial joint, or specific cervical zygapophyseal joints can be used to confirm the diagnosis. When conservative treatment measures, such as physical therapy, fail, interventional techniques, such as intraarticular steroid injections, have been shown in observational studies to provide relief in some patients.

Objectives: To determine the efficacy of intraarticular cervical facet steroid injections in the treatment of CGH.

Study Design: Systematic review and meta-analysis.

Methods: We conducted a comprehensive search of Ovid Medline, Embase, Cochrane Central Register of Controlled Trials, Cumulative Index to Nursing and Allied Health Literature Plus with Full Text, Scopus, and the Web of Science platform, from inception to April 2021, for studies using intraarticular cervical facet injections to treat CGH in adults aged 18 or older. Primary outcomes included mean postinjection pain scores. Outcomes were pooled using a random effects model and reported as mean differences (MD) with 95% confidence intervals (CI).

Results: Three studies with a total of 64 patients met the inclusion criteria. According to data from each of the included studies, intraarticular cervical facet injections were shown to demonstrate improvement in the mean pain score from baseline to postintervention. The overall effect size—pooled MD in the Visual Analog Scale score—was 3.299 (95% CI: 2.045 to 4.552, $P < 0.001$). Heterogeneity (I^2) was 36.11%.

Limitations: Small sample size, lack of control group, and varying pain generators and interventional technique between studies contribute to the limitations of the analysis.

Conclusions: Our findings suggest that therapeutic intraarticular cervical facet injections may be effective in the treatment of CGH. Because of the heterogeneity among the studies, these results should be interpreted with caution.

Key words: Cervicogenic headache, cervical facet pain, atlantoaxial joint, atlanto-occipital joint, steroid injection, corticosteroid injection, glucocorticoid injection, intraarticular facet injection, zygapophyseal joint, headache

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Cervicogenic headache (CGH) is a secondary headache disorder that is generally defined as headache referred from upper cervical joints and spinal nerves C1-C3, bony structures, or soft tissue of the neck (1,2). According to the International Classification of Headache Disorders Third Edition (ICHD3), the diagnosis of CGH must fulfill at least 2 of the following criteria: headache develops in close temporal relation to onset of cervical disorder, headache improves with improvement in cervical disorder, headache is worsened by cervical provocative maneuvers, or headache is abolished by diagnostic blockade of cervical structure or nerve supply. This diagnosis can be tedious to clearly establish as it can share clinical presentations in those patients with tension-type headache, migraine, pericranial tenderness, or other headaches attributed to disorders of the neck (3).

Initially, CGH was thought to be a strictly unilateral headache; however, in practice, patients may present with bilateral headache that favors the initial side of injury during exacerbation (2). In CGH, the quality of headache is usually nonthrobbing pain of moderate intensity. Patients can report headaches starting either in the neck or occipital region, which may be accompanied by nonradicular shoulder pain (4). There are typically neither associated features, such as photophobia or phonophobia, nor cranial autonomic features. However, Sjaastad et al (5) notes that approximately 12% of the general population has migraines; therefore, it can be expected that a similar proportion of those with CGH also have comorbid migraines. Patients with migraines can have neck pain that begins in close relation to an attack, but if concomitant CGH is present, this headache may not respond to typical migraine treatments.

To further complicate the diagnosis of CGH, plain x-rays, computed tomography (CT), or magnetic resonance imaging (MRI) have not been shown to have a confirmatory diagnostic role; moreover, cervical spine disease is common in the general population and a risk factor for migraine (6). While a comprehensive evaluation for cervical lesions should be performed, one study by Pfaffenrath et al (7) demonstrated no difference in cervical radiograph findings in those with CGH vs control. On the other hand, advanced imaging techniques, such as fractional anisotropy of the C2 dorsal ganglion and use of diffuse tensor imaging parameters, could be helpful in grading headache severity in CGH (8).

Although the exact pathophysiologic mechanism

of CGH has yet to be clearly elucidated, one hypothesis proposes that CGH involves irritation of the upper cervical nociceptive afferents, most commonly C2-C4, and activation of the trigeminal nociceptive afferents in the trigeminocervical complex (9). Moreover, there is a well-recognized functional connectivity between upper cervical and trigeminal afferents, known as the convergence mechanism (10). This results in the distribution of pain throughout regions of the head that are innervated by cervical afferents (1,11).

Currently, first-line treatment recommendations for CGH include structured education, support, and physical therapy (12). Therapist-driven cervical manipulation and mobilization, self-applied cervical mobilization, cervico-scapular strengthening, and therapist-driven cervical and thoracic manipulation have been associated with improvement in pain and disability (13). In fact, recent comparative studies (14,15) suggest that spinal manipulative therapy may provide effective, short-term pain relief that is superior to nonmanipulative therapies. Evidence for effectiveness of pharmacotherapy is limited for CGH. While pregabalin has demonstrated a reduction in number of headache days in a small randomized study (16), other agents more commonly used for headache disorders, such as sumatriptan and indomethacin, have not shown benefit. Because CGH responds to cervical nerve blocks, anesthetic blocks in the atlantoaxial or upper zygapophyseal joints have adopted a dual role in supporting diagnosis and providing pain relief (12). These types of intraarticular joint injections are usually performed using glucocorticoid and/or local anesthetic. For patients with CGH that involve myofascial trigger points in the posterior neck muscles, needling techniques with or without injectate are another therapeutic option. Radiofrequency ablation (RFA) and cervical interlaminar epidural steroid injections have been utilized for patients who have failed conservative treatments (9).

While there are several case studies and case series describing the use of interventional techniques, including glucocorticoid injections for CGH, a quantitative analysis to determine the value of cumulative evidence has yet to be performed (12). Given the specific nature of the topic and known limited availability of randomized controlled trials in this area, we focused on nonrandomized studies for our review. We conducted a systematic review and meta-analysis to evaluate the effectiveness of intraarticular cervical facet glucocorticoid injections for the treatment of CGH.

METHODS

Study Registration

The systematic review was conducted with guidance from the Methodological Expectations of Cochrane Intervention Reviews Manual (17) and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) (18) and the Meta-analyses of Observational Studies in Epidemiology checklists (19). The review methods were established prior to conduction of the review. The study protocol was registered at the International Prospective Register of Systematic Reviews as CRD42020157947.

Literature Search

Search Strategy

The search strategy was developed by an academic health science librarian (JR) in consultation with the research team (MA, BM) and was reviewed by another medical librarian using the Peer Review for Electronic Search Strategies tool (20). The search strategy was written for Ovid Medline and translated using each database's syntax, controlled vocabulary, and search fields. Medical Subject Headings terms, Emtree terms, and text words were used for CGH, atlantoaxial, and zygapophyseal joints, and glucocorticoids and their synonyms. We searched Ovid Medline (including Epub-Ahead-of-Print, In-Process & Other Non-Indexed Citations and Daily), Embase (Elsevier, Embase.com), Cochrane Central Register of Controlled Trials (CENTRAL) (Cochrane Library, Wiley), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Plus with Full Text (Ebsco), Scopus (Elsevier), and the Web of Science platform (Clarivate: Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index, Conference Proceedings Citation Index-Science, Conference Proceedings Citation Index-Social Science & Humanities, Emerging Sources Citation Index, KCI-Korean Journal Database, Russian Science Citation Index, Scientific Electronic Library Online (SciELO) Citation Index). The Medline search strategy was adapted for other databases, in part, with the use of the Institute for Evidence Based Health care's Polyglot Search translator (21). No language, date, or other limits were applied. All databases were searched April 22, and 23, 2021. For full search strategies, see Appendix 1. All database records were downloaded to EndNote X9 (22), and uploaded to Covidence Web-based software for deduplication, screening, and full-text evaluation (23). We contacted

one study author to request demographic data. We did not contact any manufacturers, other experts, or search study registries. We reviewed the studies (24,25) included in systematic reviews on related topics. The Retraction Watch database and journal Web sites were checked for retractions of included studies. Full citations of included and excluded studies with reason for exclusion can be found in Appendices 2 and 3, respectively.

Inclusion Criteria

We included studies where the population studied were adults (aged 18 years or older). The patients needed to be diagnosed with CGH and present with axial cervical pain or headache with neck involvement refractory to physical therapy or medication. Patients included in our analysis needed to be treated with intraarticular injection of steroid with or without local anesthetic into cervical facet, atlanto-occipital (AO), or atlantoaxial joint. The primary outcome measure was pain relief after the intervention.

Exclusion Criteria

This study's exclusion criteria consisted of individuals who presented with primary headaches, cervical myofascial pain syndrome, cervical radiculopathy, cervical disc herniation, or myelopathy, cervical fracture, and other cervical spine diseases. The individuals also could not have previously received an intraarticular injection of a steroid. Studies including patients with history of head or neck trauma or a pediatric population were excluded. Articles not written in English, articles consisting of only an abstract, duplicate studies, unpublished studies, or review or case studies were also excluded.

Study Selection

The studies were screened separately by 2 independent reviewers (MA and NMC). Each of the reviewers screened the study titles and abstracts to assess for eligibility based on the exclusion and inclusion criteria. The full texts of those studies were then reviewed by the same 2 independent reviewers. If there were discrepancies between the 2 reviewers, they met in person to discuss each full text and come to a final consensus. If no consensus could be met still, a third reviewer was to be used if needed.

Analysis and Extraction of Data

Two authors (MA and NMC) independently per-

formed the data extraction, using the inclusion and exclusion criteria to report the most relevant details from the studies included. The extracted data included the first author's name, year of publication, study design, number of patients, diagnosis, duration of pain, inclusion criteria, type of intervention, mean follow-up time, outcome measures of interest.

Quality Assessment

All quality assessment evaluations were independently completed by 2 authors who subsequently compared and discussed results from each of the above tools to confirm accuracy. The AMSTAR-2 (26), A Measurement Tool to Assess Systematic Reviews tool, was one of the tools used to assess the quality of our review. The critical domains evaluated included: protocol registration before commencement of review, adequacy of the literature search, justification of excluding individual studies, risk of bias from individual studies being included in the review, appropriateness of meta-analytical methods, consideration of risk of bias when interpreting the results of the review, and assessment of presence and likely impact of publication bias. Risk of bias assessment was completed using the Mixed Methods Appraisal Tool (MMAT) (27) and the Interventional Pain Management Techniques-Quality Appraisal of Reliability and Risk of Bias Assessment for Nonrandomized or Observational Studies (IPM-QRBNR) (28). The domains assessed in the MMAT included: clarity of research question, data collected acceptable to address the research question, patient representativeness of the target population, measurement appropriateness regarding both the outcome and intervention, completeness of outcome data, confounders accounted for in design and analysis, and intervention administration as intended (27). The IPM-QRBNR domains assessed included: study design guidance and reporting, study design type, setting, imaging, sample size, statistical methodology, inclusiveness of population, selection criteria for facet and sacroiliac joint interventions, duration of pain, previous treatments, duration of follow-up, outcomes assessment, description of dropout rate, similarity of groups at baseline, role of co-interventions, method of assignment of patients, and funding and scholarship (Table 1). Studies with IPM-QRBNR score < 16 were considered low quality, a score of 16 to 31 was moderate quality, and a score of 32 to 48 was considered high quality (28).

Statistical Analysis

We conducted meta-analysis using Comprehensive Meta-Analysis (CMA) software 3.0 (Biostat Inc., Englewood, NJ). A forest plot was created from our data. A *P* value of < 0.001 was considered statistically significant. A random effects model was used to calculate the pooled mean difference (MD). The I-squared value, calculated using the CMA software as well, showed the inconsistency of results across studies and was described as a percentage. The higher the percentage, the more the study differences are due to heterogeneity rather than by chance. The interpretation for the I-squared value were as follows: Might not be significant heterogeneity (0% to 40%), may represent moderate (30% to 60%) heterogeneity, may represent substantial (50% to 90%) heterogeneity, and considerable (75% to 100%) heterogeneity (17).

RESULTS

Study Selection

A total of 1,511 studies were identified by the literature search and an additional 38 were found by citation analysis of systematic reviews found by our search. After exclusion of duplicates, 922 studies were screened for full-text review. Of the 55 studies assessed for eligibility for quantitative analysis, 3 studies (29-31) met the inclusion criteria and were included (see Appendix 2 for included studies). The majority of the studies, which did not meet inclusion criteria, were excluded due to being reviews or case studies (2,4,5,9,32-60) or not involving an intraarticular injection of a steroid as treatment (38,61-65). Three studies (66-68) were excluded because intraarticular facet joint injections were combined with cervical nerve blockade. Appendix 3 shows excluded studies with reasons for exclusion. Figure 1 shows the PRISMA flow diagram of the literature search and selection of the manuscripts for inclusion.

Risk of Bias Across Studies

Utilizing MMAT, it was calculated that each of the studies included within our meta-analysis fell into Category 3—quantitative nonrandomized study. Each of the included studies fulfilled the 5 methodological criteria listed in the MMAT under Category 3. Assessment by the IPM-QRBNR criteria showed each of our included studies to be of moderate-to-high quality, with scores ranging from 28 to 33 out of 48 (Table 1). According to the rating criteria of AMSTAR-2, our review was deemed to be of high-quality as there were no critical domain weaknesses.

Characteristics of Studies

Table 2 shows the characteristics of the included studies. Two of the three included studies were retrospective observational studies (29,30), while the other was a prospective observational study (31). The mean ages varied between the 2 studies for which this data was available—37.5 (24) vs 51.1 (26). The gender of patients for these studies also varied, with the majority being men, and substantial majority being women for Slipman et al (29) and Lee et al (31), respectively. Age and gender data were unavailable for Narouze et al (30), and the author was contacted to confirm this. Between the 3 studies, a total of 64 patients were included in our analysis. The follow-up periods after intervention ranged between the studies, from 1 and 2 months (26), to 1, 3, and 6 months (30) to an average of 19 months (range 12-29) (29). While the inclusion criteria for each study included refractory headaches, the associated purported cervical pain generator varied between the studies. The AO joint (31), atlantoaxial joint (30), and C2-C3 joints (29) were injected under fluoroscopic guidance. In the Narouze et al (30) study, patients were injected once, while at least 2 injections were performed in the Lee et al (31) and Slipman et al (29) studies. Steroid was mixed with local anesthetic for all injections performed.

Outcomes

Table 3 shows the results of the included studies. The mean Visual Analog Scale (VAS) score improved from baseline to postintervention in all 3 studies. Lee et al (31) reported an improvement from 5.6 ± 2.2 (mean ± [standard error] at baseline to 1.9 ± 1.7 at one month (*P* < 0.01) and to 0.6 ± 1.3 at 2 months (*P* < 0.01) postinjection. Narouze et al (30) reported a mean VAS score of 6.8 ± 0.5 pre-injection to 1.9 ± 0.5 (*P* < 0.001), 3.6 ± 0.7 (*P* < 0.008), and 3.7 ± 1.1 (*P* = 0.208) at 1, 3, and 6 months postintervention, respectively. Slipman et al (29) reported a baseline mean VAS score of 8.2 (range 3.9-10.0), which improved to a mean VAS of 5.5 (range 0.0-8.8) at an average of 19 months after treatment was completed.

In addition to the VAS score, secondary outcomes measures were reported unique to each of the included studies. Lee et al (31) reported that 50% and 60% of patients experienced a ≥15-point reduction in the Neck Disability Index (NDI) at 1 and 2 months, respectively. The proportion of patients who had a 50% decrease in the VAS and 15-point drop in the NDI was 57.1%. Narouze et al (30) reported 16.6% of patients in

Table 1. Item checklist for assessment of included studies utilizing IPM-QRBNR criteria.

Item No	Lee 2015 (29)	Narouze 2007 (28)	Slipman 2001 (27)
I. STROBE OR TREND Guidance			
1. Study Design Guidance and Reporting	3	2	3
II. DESIGN FACTORS			
2. Study Design and Type	0	1	1
3. Setting/Physician	2	2	2
4. Imaging	3	3	3
5. Sample Size	0	0	0
6. Statistical Methodology	2	1	2
III. PATIENT FACTORS			
7. Inclusiveness of Population	3	3	3
8. Duration of Pain	1	0	2
9. Previous Treatments	2	2	2
10. Duration of Follow-up With Appropriate Interventions	1	2	4
IV. OUTCOMES			
11. Outcomes Assessment Criteria for Significant Improvement	4	4	4
12. Description of Dropout Rate	1	1	1
13. Similarity of Groups at Baseline for Important Prognostic	1	2	1
14. Role of Co-Interventions	2	2	2
V. ASSIGNMENT			
15. Method of Assignment of Patients	2	3	3
VI. CONFLICTS OF INTEREST			
16. Funding and Sponsorship	4	0	0
Total Score	31	28	33

Abbreviation: IPM-QRBNR, risk of bias assessment for nonrandomized or observational studies.

the study completely stopped narcotic medications at 9 months follow-up, and 3 patients sustained complete headache resolution at 9 months. Slipman et al (29) reported that 61% of patients in the study with fewer than 3 headaches per week experienced relief with oral analgesics, and 17% of patients had no relief. Slipman et al (29) also evaluated employment status, reporting that one-third of the patients evaluated who were working part time or limited duty returned to full-time work status without restrictions, and one patient who was disabled/unemployed returned to full-time work status.

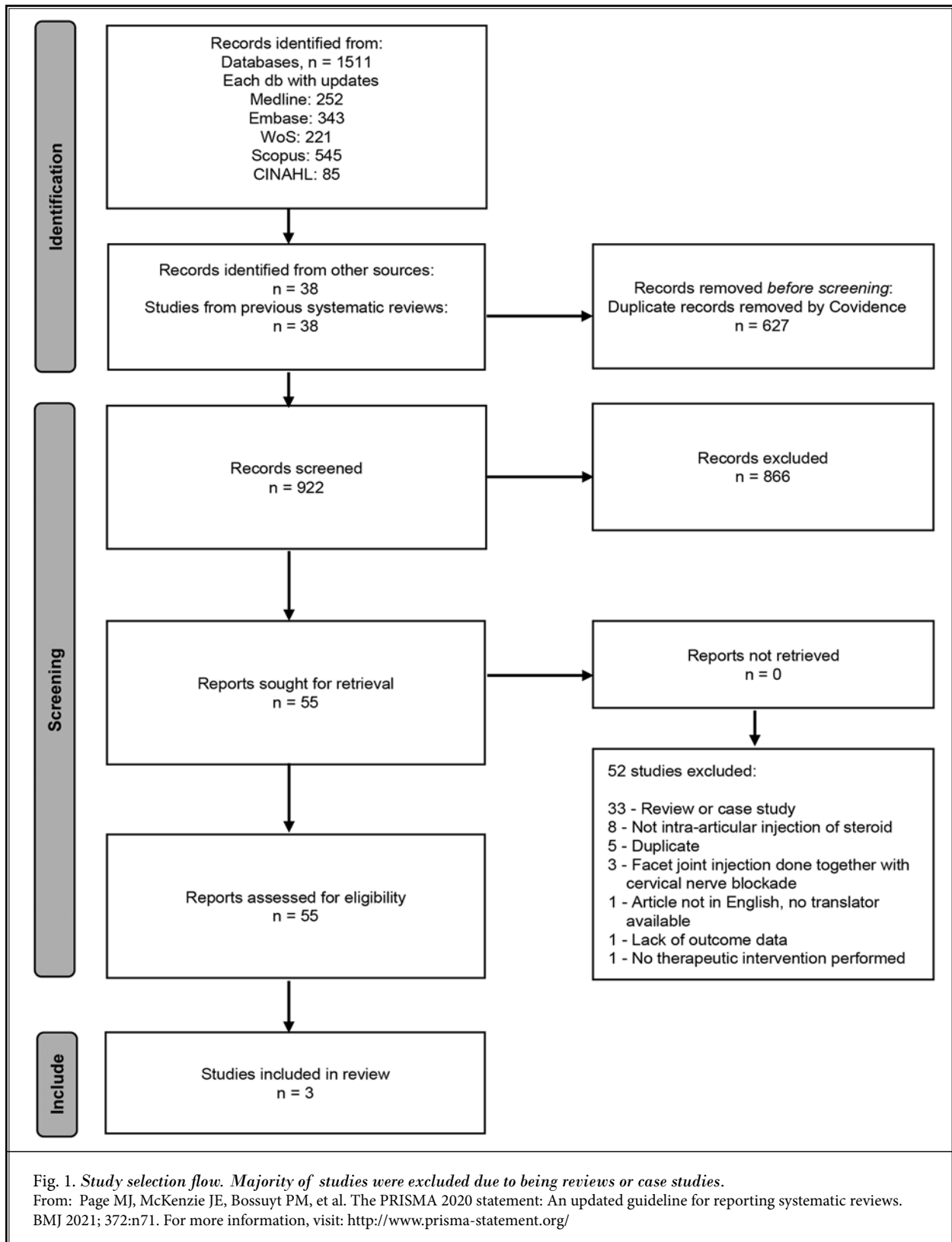


Figure 2 shows the combined results of our meta-analysis to assess pain scores using the VAS in patients who underwent intraarticular injection of steroid for CGH. As shown in Fig. 2, the pooled MD in the VAS score from baseline to last follow-up was a decrease by 3.299 (95% CI: 2.045 to 4.552, $P < 0.001$, $I^2 = 36.11\%$). Given the limited number of included studies, and consequent unlikelihood that the investigation would produce useful findings, subgroup analysis was not performed.

Publication Bias

Publication bias analysis was not performed, as only 3 studies were included in the meta-analysis thus rendering it difficult to differentiate true asymmetry from chance (69).

DISCUSSION

CGH is a challenging diagnosis to treat, in part, due to the various cervical structures, which may serve as the primary pain generator (1,2). This anatomic difficulty is exacerbated by the limited utility of imaging in confirming diagnostic suspicions. The studies included in our meta-analysis described 3 joints which were deemed to be pain generators for CGH—the atlantoaxial joint, AO joint, and C2-C3 facet joint. Figure 3 depicts the referred pain distribution of these upper cervical facet joints, as previously illustrated by Bogduk et al (37). Largely, diagnostic blocks with local anesthetic confirmed these joints as the source of pain for patients prior to steroid injection for therapeutic benefit. While neither the ICHD2 or ICHD3 diagnostic criteria were explicitly mentioned in the included studies, the ICHD3 criteria were evidently met in each study given the described headache patterns, cervical range of motion restriction, and suppression of pain following diagnostic blocks.

Patient selection was relatively uniform between the studies, and consistent with the CGH standards of treatment previously described. Patients who failed conservative management were selected to be candidates for the diagnostic and/or therapeutic injection(s). Whether all patients underwent physical therapy; however, is not entirely clear. Both Lee et al (31) and Slipman et al (29) required patients to have failed physical therapy. Narouze et al (30) reported patients had to have failed multiple pharmacological management, but did not specify if physical therapy was a necessary criterion.

Table 2. Characteristics of included studies.

Author (y)	Study Design	Sample Size	Age	Gender	Follow-up, Months	Inclusion Criteria	Injection	Guidance
Lee et al 2015 (29)	Prospective	20 (14 with reported headache)	24-74 years old. Mean age 51.1.	4 Men 16 Women	1 and 2 months	Chronic refractory suboccipital neck pain and/or headache (70% of patients with AO pain complained of CGH in this study) with limited ROM of lateral bending with rotation at AO joint for over 3 months	At least 2 AO intraarticular injections with 1 cc injection of a mixture of 0.75 mL of 2% lidocaine and 0.25 mL of 10 mg triamcinolone, spaced approximately one week apart.	Fluoroscopic imaging
Narouze et al 2007 (28)	Retrospective	32			1, 3, and 6 months	Intractable headaches with atlantoaxial joint pain, refractory to multiple pharmacological management	Single injection: 1.0 mL of a mixture of bupivacaine 0.5% and 10 mg of triamcinolone.	Fluoroscopic imaging
Slipman et al 2001 (27)	Retrospective	18	25-50 years old. Mean age 37.5.	11 Men 7 Women	Avg. 19 (range 12-29)	One-year period of refractory daily headache symptoms following a whiplash event, which failed to improve after 3 months of conservative measures	At least 2 injections of 0.8 mL of betamethasone and 0.2 mL of 1% lidocaine into the C2-C3 facet joint within a 2-week interval	Fluoroscopic imaging

Abbreviations: AO, atlanto-occipital; CGH, cervicogenic headache; ROM, range of motion.

Table 3. Results of the included studies.

Author (y)	Pain Outcome Measures	Baseline (Mean VAS Score)	Post-intervention (Mean VAS Score)	Secondary Outcomes	Conclusion
Lee et al 2015 (29)	VAS for CGH, posterior neck pain, and other referred pain.* NDI.	5.6 ± 2.2 (mean ± SE).	1.9 ± 1.7 at one month (P < 0.01) and to 0.6 ± 1.3 at 2 months (P < 0.01).	50% and 60% of patients experienced a ≥/= 15-point reduction in NDI) at 1 and 2 months, respectively.	AO joint steroid injection is an effective intervention for chronic AO joint dysfunction for a short period of time.
Narouze et al 2007 (28)	Onset and duration of headache, VAS on pain, changes in headache pattern, and changes in medication use. Measured at time intervals of 1, 3, and 6 months.	6.8 ± 0.5 (mean ± SE).	1.9 ± 0.5 (P < 0.001), 3.6 ± 0.7 (P < 0.008), and 3.7 ± 1.1 (P = 0.298) at 1, 3, and 6 months, respectively.	16.6% completely stopped narcotic medications at 9 months follow-up. Three patients sustained complete headache resolution for the 9-month study period.	Intraarticular steroids can provide effective, short-term pain relief originating from the lateral atlantoaxial joint. DDx of CGH includes median and lateral atlantoaxial joint
Slipman et al 2001 (27)	VAS score (baseline) NRS-11 score (follow-up). Headache frequency (I: No headaches, II: < 3 each month, III: < 3 each week, IV: 4-7 each week, V: symptoms unchanged). Medication usage (narcotic analgesics, prescription NSAIDs, OTC medication). Employment status (full-time, part-time, limited duty, disabled/unemployed).	8.2 (range 3.9-10.0).	5.5 (range 0.0-8.8).	61% of patients with < 3 headaches per week experienced relief with oral analgesics. 17% of patients had no relief. One-third working part time or limited duty returned to full-time work status without restrictions. One patient who was disabled/unemployed returned to full-time work status.	Findings suggest therapeutic intraarticular zygopophyseal injections are effective in the treatment of chronic headaches emanating from the C2-C3 joint after a whiplash injury.

Abbreviations: VAS, visual analog scale; CGH, cervicogenic headache; NDI, neck disability index; NRS-11, numeric rating scale; NSAIDs, nonsteroidal anti-inflammatory drugs; OTC, over the counter; SE, standard error; AO, atlanto-occipital; DDx, differential diagnosis.

*Data used only for the 14/20 patients who complained of headache.

Overall, the reported duration of pain experienced by patients prior to injection varied between studies as well, ranging from an average of 19 months (31) to 34 months (29).

The characteristics of the diagnostic block procedure differed between the studies, including the necessary threshold for pain relief. Lee et al (31) performed diagnostic blocks with patients requiring 50% pain relief or greater prior to qualifying for steroid injection. Slipman et al (29) required an 80% reduction in the VAS score after receiving diagnostic local anesthetic injection into the C2-C3 joint space. Narouze et al (30), in contrast, did not perform an injection solely consisting of local anesthetic before patients underwent single local anesthetic plus steroid injection, which was both diagnostic and therapeutic.

The risk of intraarticular injectate spillage is an important consideration for cervical facet joint injections (67). Studies (29,67) have pointed to possible adjacent nerve root pain relief through this mechanism. To limit our analysis to intraarticular treatment as much as possible, studies (66-68) were excluded from our analysis in which cervical facet joint steroid injection was combined with nerve block. In a study to identify the cervical facet joints as a source of neck pain with associated headache in some cases, Bogduk et al (37) used cervical medial branch blocks in all patients with positive results while choosing to use intraarticular blocks complementarity to “check the specificity of the nerve blocks.” The long-term therapeutic effect of intraarticular injections; however, was not the aim of the study. In another study (68), it was concluded that combined C1-C2 and C2-C3 facet joint and C2 and C3 spinal rami blocks have been shown to provide significant pain relief in

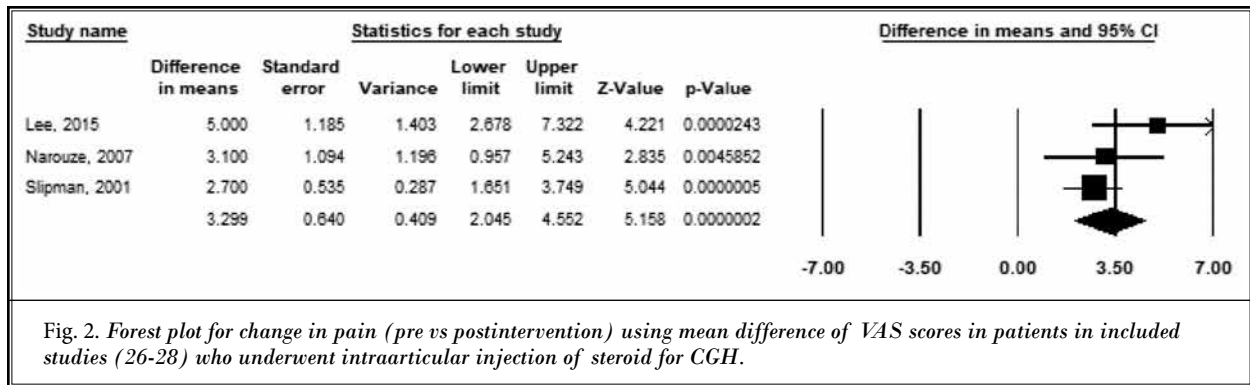


Fig. 2. Forest plot for change in pain (pre vs postintervention) using mean difference of VAS scores in patients in included studies (26-28) who underwent intraarticular injection of steroid for CGH.

patients with CGH; however, it was reported that the C2 and C3 spinal rami may play a more important role than the facet joints given that the patients in this study with recurrent pain received comparable pain relief solely with nerve blockade.

The diagnostic and therapeutic advantages and disadvantages of intraarticular injections vs medial branch nerve blocks for CGH remains an important dialogue. Medial branch blocks can be an important diagnostic measure for patients with significant facet joint pathology who may not be able to undergo intraarticular injections due to obliterated joint space. Medial branch blocks are also thought to be easier to perform than intraarticular injections, which necessitate skillful entry into a narrow joint space, sometimes after making many adjustments (70). With respect to cervical facet joint-induced neck pain, a systemic review by Falco et al (71) found reasonably strong evidence for treatment using RFA, for which medial branch blocks, rather than intraarticular injections, serve as a diagnostic precursory procedure.

Despite the above-mentioned advantages of medial branch blocks, diagnosis of CGH with intraarticular facet joint block may be more accurate in some instances given 10% to 15% of facet joints receive aberrant innervations from nonmedial branch nerves (72). In addition, the only method of establishing a definite diagnosis of an atlantoaxial joint etiology of CGH, which may account for up to 16% of patients with occipital headache, is an intraarticular atlantoaxial joint injection (73). Diffuse cervical facet arthropathy with upper neck pain and headaches refractory to

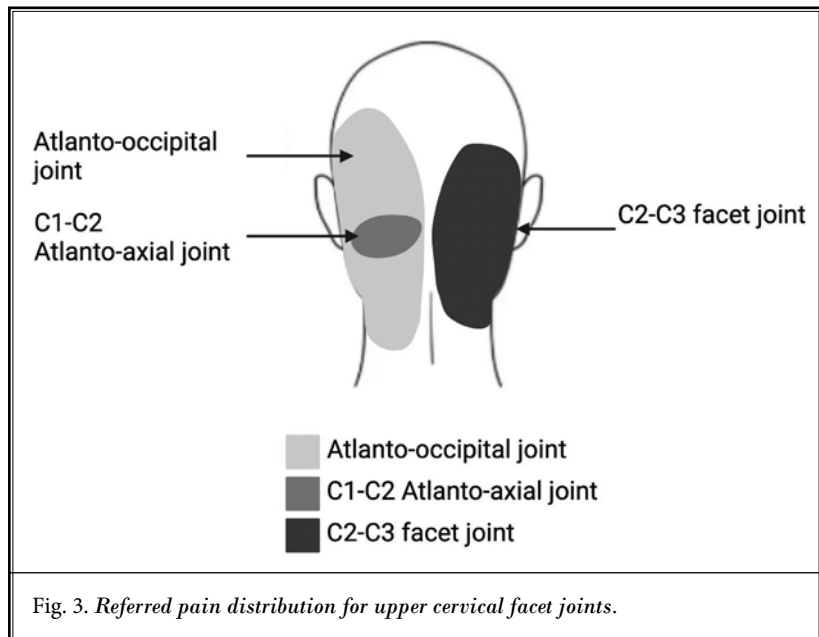


Fig. 3. Referred pain distribution for upper cervical facet joints.

conservative measures is a recognized indication for direct intraarticular steroid injections into either the atlantoaxial or atlanto-occipital joint (74). In general, intraarticular facet injections with steroid are superior to medial nerve blocks in the presence of facet joint pain caused by inflammation (70). This treatment may also be a more plausible option for patients who are potentially at risk for adverse consequences of RFA (i.e., elderly persons on anticoagulant medication, those with implantable cardiac devices, or young athletes), those who have had success with previous intraarticular diagnostic injection, or those without access to cervical RFA (75).

Cervical facet intraarticular steroid injections are not without risks. Given the proximity of especially the upper cervical facet joints to the vertebral artery, optimal needle placement is crucial to avoid injury or

injection to the vessel. Anatomic variations exist, which serve as the basis for the recommendation to acquire preprocedural imaging with CT or MRI to help guide needle trajectory (73). Intraarticular cervical facet injections, as demonstrated in our included studies, are often combined with local anesthetics, such as lidocaine, ropivacaine, and bupivacaine, which are chondrotoxic and may affect facet joint cartilage. There are also well-established potential central nervous system and cardiac effects from bupivacaine after inadvertent intrathecal or intravascular injection. Ropivacaine, as a less cardiotoxic and neurotoxic option than other long-acting local anesthetics, has garnered interest among practitioners (76). With respect to the type of steroid to use for atlanto-occipital and atlantoaxial joint injections, no review articles or studies have been published regarding whether to use short-acting, long-acting, nonparticulate, or particulate formulations. When intraarticular steroid injections are performed at the C2-C3 facet joint, nonparticulate steroids should be used (75).

In our analysis, the number of intraarticular steroid injections performed per patient, treatment time course, and follow-up length of time are other sources of variability between the included studies. Lee et al (31) reportedly determined prior to initiation of the study that a single injection was—based on previous clinical experience—not sufficient to gain significant pain relief, so patients were given at least 2 injections separated by about one week. Narouze et al (30), as previously mentioned, gave a single injection to patients, and Slipman et al (29) gave the patients responding to diagnostic injection 2 steroid injections within an interval of 2 weeks. While follow-up mean VAS scores were calculated at 2 months for Lee et al (31), and 3 months for Narouze et al (30), the pain score received from patients for Slipman et al (29), during follow-up, was at an average of 19 months. This longer duration between treatment and follow-up is possibly reflected in the seemingly smaller improvement in mean pain scores in the latter study when compared to the others.

To the best of our knowledge, the current meta-analysis is the first to assess the effectiveness of intraarticular cervical facet steroid injections in the treatment of CGH. This study yields a key finding which

may have significant clinical implications: CGH, while a complex diagnosis, in part due to various pain generators in the neck, can potentially be ameliorated with intraarticular injections to one of at least 3 different joints. Therefore, patients meeting the diagnostic criteria for CGH who are unresponsive to a diagnostic block in one joint may respond to an injection in another.

While each of the studies included in our meta-analysis concluded potential benefit of intraarticular steroids in the treatment of CGH, the results of the pooled data indicated increased heterogeneity, which raises concerns about the analysis. Given the small number of studies included, lack of control group, low study sample sizes, and variability between the studies in the aforementioned areas, the effectiveness of this treatment cannot be fully ascertained via our meta-analysis with the present available literature. Correspondingly, the scant quantity of studies available on this subject matter produced within the last few years restricted our ability to limit our sources to predominantly novel research.

CONCLUSIONS

Intraarticular cervical facet injections with steroid may be beneficial in the treatment of CGH. While our synthesis of the relevant data and qualitative comparisons between studies provides a strong framework that points to utilizing this promising therapy for a challenging diagnosis, additional research with control groups and larger sample sizes is needed to confirm the effectiveness of this treatment.

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Author Contributions

This study was designed by TM, MA, and BM. JR performed the literature search. MA and NMC participated in the search, review, and quality analysis phases. Statistical analysis was performed by TS and MA. All authors contributed to the preparation of the manuscript, which was approved by TM and CP.

Appendices available at www.painphysicianjournal.com

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49 Methylprednisolone/ or (methylprednisolone* or methyl-prednisolone* or 6-methylprednisolone* or adlone-40* or adlone-80* or beta-methylprednisolone* or depmedalone* or dep-medalone* or deproject-80* or depopred* or esametone* or firmacort* or medixon* or med-jec-40* or mednin* or medralone-80* or medrate* or medrol* or medrone* or meprednisolone* or meprelon* or mesopren* or methacort* or methylcotol* or methylpred-dp* or methylsterolone* or metidrol* or metipred* or metrisone* or metycortin* or metypred* or metypresol* or neomedrone* or nsc19987* or nsc-19987* or prednol* or solomet* or solu-decortin* or urbason* or x4w7zr7023*).ti,ab,kf. 27832

50 Paramethasone/ or (paramethason* or alfa6* or alfa-6* or aloxicort* or cortiden* or metilar* or paramesone* or parametazon* or para-methasone* or paramethazone* or paramezone*).ti,ab,kf. 505

51 Prednisolone/ or (prednis* or adelcort* or antisonlon* or aprednislon* or benisonlon or berisonlon* or berisonlon* or caberdelta* or capsoid* or codelcortone* or co-hydeltra* or compresolon* or cortadeltona* or cortadeltone* or cortalone* or cortelinter* or cortisolone* or cotolone* or dacortin* or dacrotin* or decaprednil* or decortril* or dehydrocortex* or dehydro-cortex* or dehydrocortisol* or dehydrohydrocortison* or dehydro-hydrocortison* or delcortol* or delta1-dehydrocortisol* or delta1-dehydrohydrocortisone* or delta1-hydrocortisone* or deltacortef* or delta-cortef* or deltacortenolo* or deltacortil* or deltacortoil* or deltacortril* or delta-cortril* or delta-ef-cortelan* or delta-f* or deltaglycortril* or deltahycortol* or delta-hycortol* or deltahydrocortison* or delta-hydrocortison* or deltaophticor* or delta-ophticor* or deltasolone* or deltastab* or delta-stab* or deltidrosol* or deltsi-

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- 52 Prednisone/ or (prednison* or ancortone* or apoprednisone* or biocortone* or colisone* or cortan* or cortidelt* or cortiprex* or cutason* or dacorten* or dacortin* or decortancyl* or decortin* or decortisyl* or de-cortisyl* or dehydrocortisone* or dekortin* or delitison* or delta-1-dehydrocortisone* or delta-cortelan* or deltacorten* or deltacortisone* or delta-cortisone* or deltacortone* or delta-dome* or delta-prenovis* or deltison* or deltra* or diadreson* or di-adreson* or drazone* or encorton* or enkortolon* or enkorton* or fernisone* or hostacortin* or insone* or kortancyl* or liquid-pred* or lodotra* or me-korti* or mepriolon* or metacortandracin* or meticorten* or meticortine* or nisona* or nsc10023* or nsc-10023* or orasone* or orisane* or panafcort* or panasol* or paracort* or pehacort* or precort* or prednicen-m* or prednicorm* or prednicot* or prednidib* or predniment* or predni-tablinen* or prednitone* or pronison* or pronizone* or pulmison* or rayos* or rectodelt* or servisone* or steerometz* or steraped* or ultracorten* or urtilone* or vb0r961hzt* or winpred*).ti,ab,kf. 56064
- 53 Triamcinolone/ or (triamcinolon* or 1zk20vi6ty* or acetocot* or adcortyl* or aristocort* aristodan* or azmacor* or celeste* or cl19823* or cl-19823* or clinacort* or clinalog* or delphicort* or fluoxiprednisolone* or fluoxyprednisolone* or kenacort* or ken-jec-40* or korticoid* or ledercort* or omcilon* or polcortolon* or rp8357* or rp-8357* or simacort* or sterocort* or tac-3* or tramcinolone* or triacortyl* or triam-a* or triamcort* or triamcot* or triam-forte* or triamonide-40* or triamsicort* or triancinolon* or u-tri-lone* or volon*).ti,ab,kf. 10788
- 54 Triamcinolone Acetonide/ or (triam* or aftab* or aftach* or ahbina* or albicort* or allegra-nasal* or aquatain* or aristocort-a* or aristoderm* or aristogel* or azmacort* or centocort* or cinolar* or cinonide* or denkakort-forte* or f446c597ka* or facort* or flutex* or flutone* or fougera* or ftorocort* or gemicort* or generlog* or invert-plaster* or kemzid* or kenac* or kenalog* or kena-log* or kenalone* or kenlog* or ledercort-a* or ledercort-d* or manolone* or metoral* or nasacort* or nasocoraq* or nincort* or oracort* or oralog* or oralone* or oramedy* or orrepaste* or panalog* or pokkortolon* or shincort* or solodelf* or steronase-aq* or tibicorten* or tibiocorten* or tramacin* or triacet* or triacort* or triaderm* or tri-anemul* or trianide* or triatex* or tricort* or triderm* or tridez* or triesence* or trigon* or trikort* or trinolone* or trivaris* or trydex* or vetalog* or vistrec* or yn102* or yn-102* or zilretta*).ti,ab,kf. 30881
- 55 Cortisone/ or (cortison* or 883wkn7w8x* or adrenalex* or adreson* or corlin* or cortadren* or cortagen* or cortandren* or cortane* or cortisal* or cortisate* or cortistal* or cortivite* or cortogen* or cortone* or incorlin* or incortin* or kendall-compound-e* or nsc9703* or nsc-9703* or ricortex* or scheroson* or v27w9254fz* or wintersteiner-compound-f*).ti,ab,kf. 23667
- 56 Fludrocortisone/ or (fludrocortisone* or 9alpha-fludrocortisone* or 9-alpha-fludrohydrocortisone* or 9-alpha-fluoro-17-hydroxycorticosterone* or

9alpha-fluorocortisol* or 9alpha-fluorocortisol* or 9-alpha-fluorocortisol* or 9alpha-fluorohydrocortisone* or 9alpha-fluorohydrocortisone* or 9alpha-fluorohydrocortisone* or 9-alpha-fluorohydrocortisone* or 9-fluoro-17-hydroxycortisone* or 9-fluorocortisol* or 9-fluorohydrocortisone* or alflorone* or alpha-fluorohydrocortisone* or astonin* or fcol* or f-cortef* or florinef* or fludrocortisol* or fludrocortone* or fludrohydrocortisone* or fludrone* or fluohydrisone* or fluohydrocortisone* or fluorhydrocortisonum* or fluorinef* or fluorocortisone* or fluorohydrocortisone* or flurinef* or flurohydrocortisone* or u0476m545b*).ti,ab,kf. 2439

57 or/45-56 302661

58 6 and (13 or 29) and (44 or 57) 253

59 exp animals/ 23994389

60 exp humans/ 19179214

61 59 not 60 4815175

62 58 not 61 252

Embase (Elsevier Embase.com)

Sources: Embase, Embase Classic, MEDLINE.

Searched April 21, 2021.

343 records retrieved.

#61 #60 NOT ('chapter'/it OR 'conference review'/it OR 'review'/it OR 'case report'/de)

#60 #56 NOT #59

#59 #57 OR #58

#58 'animal experiment'/de NOT ('human experiment'/de OR 'human'/de)

#57 (rat:ti OR rats:ti OR mouse:ti OR mice:ti OR swine:ti OR porcine:ti OR murine:ti OR sheep:ti OR lambs:ti OR pigs:ti OR piglets:ti OR rabbit:ti OR rabbits:ti OR cat:ti OR cats:ti OR dog:ti OR dogs:ti OR cattle:ti OR bovine:ti OR monkey:ti OR monkeys:ti OR trout:ti OR marmoset\$:ti) AND 'animal experiment'/de

#56 #5 AND (#11 OR #27) AND (#41 OR #55)

#55 #42 OR #43 OR #44 OR #45 OR #46 OR #47 OR #48 OR #49 OR #50 OR #51 OR #52 OR #53 OR #54

#54 'fludrocortisone'/de OR fludrocortisone*:ti,ab,kw OR '9alpha fludrocortisone*':ti,ab,kw OR '9 alpha fludrohydrocortisone*':ti,ab,kw OR '9 alpha fluoro 17 hydroxycorticosterone*':ti,ab,kw OR '9alpha fluorocortisol*':ti,ab,kw OR '9alpha fluorocortisol*':ti,ab,kw OR '9alpha fluorohydrocortisone*':ti,ab,kw OR '9alpha fluorohydrocortisone*':ti,ab,kw OR '9 alpha fluorohydrocortisone*':ti,ab,kw OR '9 alpha fluorohydrocortisone*':ti,ab,kw OR '9 fluoro 17 hydroxycortisone*':ti,ab,kw

OR '9 fluorocortisol*':ti,ab,kw OR '9 fluorohydrocortisone*':ti,ab,kw OR alflorone*:ti,ab,kw OR 'alpha fluorohydrocortisone*':ti,ab,kw OR astonin*:ti,ab,kw OR fcol*:ti,ab,kw OR 'f cortef*':ti,ab,kw OR florinef*:ti,ab,kw OR fludrocortisol*:ti,ab,kw OR fludrocortone*:ti,ab,kw OR fludrohydrocortisone*:ti,ab,kw OR fludrone*:ti,ab,kw OR fluohydrisone*:ti,ab,kw OR fluohydrocortisone*:ti,ab,kw OR fluorhydrocortisonum*:ti,ab,kw OR fluorinef*:ti,ab,kw OR fluorocortisone*:ti,ab,kw OR fluorohydrocortisone*:ti,ab,kw OR flurinef*:ti,ab,kw OR flurohydrocortisone*:ti,ab,kw OR u0476m545b*:ti,ab,kw

#53 'cortisone'/de OR cortison*:ti,ab,kw OR 883wkn7w8x*:ti,ab,kw OR adrenalect*:ti,ab,kw OR adreson*:ti,ab,kw OR corlin*:ti,ab,kw OR cortadren*:ti,ab,kw OR cortagen*:ti,ab,kw OR cortandren*:ti,ab,kw OR cortane*:ti,ab,kw OR cortisal*:ti,ab,kw OR cortisate*:ti,ab,kw OR cortistal*:ti,ab,kw OR cortivite*:ti,ab,kw OR cortogen*:ti,ab,kw OR cortone*:ti,ab,kw OR incorlin*:ti,ab,kw OR incortin*:ti,ab,kw OR 'kendall compound e*':ti,ab,kw OR nsc9703*:ti,ab,kw OR 'nsc 9703*':ti,ab,kw OR ricortex*:ti,ab,kw OR scheroson*:ti,ab,kw OR v27w9254fz*:ti,ab,kw OR 'wintersteiner compound f*':ti,ab,kw

#52 'triamcinolone acetone'/de OR triam*:ti,ab,kw OR aftab*:ti,ab,kw OR aftach*:ti,ab,kw OR ahbina*:ti,ab,kw OR albicort*:ti,ab,kw OR 'allegra nasal*':ti,ab,kw OR aquatain*:ti,ab,kw OR 'aristocort a*':ti,ab,kw OR aristoderm*:ti,ab,kw OR aristogel*:ti,ab,kw OR azmacort*:ti,ab,kw OR centocort*:ti,ab,kw OR cinolar*:ti,ab,kw OR cinonide*:ti,ab,kw OR 'denkacort forte*':ti,ab,kw OR f446c597ka*:ti,ab,kw OR facort*:ti,ab,kw OR flutex*:ti,ab,kw OR flutone*:ti,ab,kw OR fougera*:ti,ab,kw OR forocort*:ti,ab,kw OR gemicort*:ti,ab,kw OR generlog*:ti,ab,kw OR 'invert plaster*':ti,ab,kw OR kemzid*:ti,ab,kw OR kenac*:ti,ab,kw OR kenalog*:ti,ab,kw OR 'kena log*':ti,ab,kw OR kenalone*:ti,ab,kw OR kenlog*:ti,ab,kw OR 'ledercort a*':ti,ab,kw OR 'ledercort d*':ti,ab,kw OR manolone*:ti,ab,kw OR metoral*:ti,ab,kw OR nasacort*:ti,ab,kw OR 'nasocor aq*':ti,ab,kw OR nincort*:ti,ab,kw OR oracort*:ti,ab,kw OR oralog*:ti,ab,kw OR oralone*:ti,ab,kw OR oramedy*:ti,ab,kw OR orrepaste*:ti,ab,kw OR panalog*:ti,ab,kw OR

pokkortolon*:ti,ab,kw OR shincort*:ti,ab,kw OR solodelf*:ti,ab,kw OR 'steronase aq*':ti,ab,kw OR tibicorten*:ti,ab,kw OR tibiocorten*:ti,ab,kw OR tramacin*:ti,ab,kw OR triacet*:ti,ab,kw OR triacort*:ti,ab,kw OR triaderm*:ti,ab,kw OR 'tri anemul*':ti,ab,kw OR trianide*:ti,ab,kw OR triatex*:ti,ab,kw OR tricort*:ti,ab,kw OR triderm*:ti,ab,kw OR tridez*:ti,ab,kw OR triesence*:ti,ab,kw OR trigon*:ti,ab,kw OR trikort*:ti,ab,kw OR trinolone*:ti,ab,kw OR trivaris*:ti,ab,kw OR trymex*:ti,ab,kw OR vetalog*:ti,ab,kw OR vistrec*:ti,ab,kw OR yn102*:ti,ab,kw OR 'yn 102*':ti,ab,kw OR zilretta*:ti,ab,kw

#51 'triamcinolone'/de OR triamcinolon*:ti,ab,kw OR 1zk20vi6ty*:ti,ab,kw OR acetocot*:ti,ab,kw OR adcortyl*:ti,ab,kw OR 'aristocort* aristodan*':ti,ab,kw OR azmacor*:ti,ab,kw OR celeste*:ti,ab,kw OR cl19823*:ti,ab,kw OR 'cl 19823*':ti,ab,kw OR clinacort*:ti,ab,kw OR clinalog*:ti,ab,kw OR delphicort*:ti,ab,kw OR fluoxiprednisolone*:ti,ab,kw OR fluoxyprednisolone*:ti,ab,kw OR kenacort*:ti,ab,kw OR 'ken jec 40*':ti,ab,kw OR korticoid*:ti,ab,kw OR ledercort*:ti,ab,kw OR omcilon*:ti,ab,kw OR polcortolon*:ti,ab,kw OR rp8357*:ti,ab,kw OR 'rp 8357*':ti,ab,kw OR simacort*:ti,ab,kw OR sterocort*:ti,ab,kw OR 'tac 3*':ti,ab,kw OR tramcinolone*:ti,ab,kw OR triacortyl*:ti,ab,kw OR 'triam a*':ti,ab,kw OR triamcort*:ti,ab,kw OR triamcot*:ti,ab,kw OR 'triam forte*':ti,ab,kw OR 'triamonide 40*':ti,ab,kw OR triamsicort*:ti,ab,kw OR triancinolon*:ti,ab,kw OR 'u tri lone*':ti,ab,kw OR volon*:ti,ab,kw

#50 'prednisone'/de OR prednison*:ti,ab,kw OR ancortone*:ti,ab,kw OR 'apo prednisone*':ti,ab,kw OR biocortone*:ti,ab,kw OR colisone*:ti,ab,kw OR cortan*:ti,ab,kw OR cortidelt*:ti,ab,kw OR cortiprex*:ti,ab,kw OR cutason*:ti,ab,kw OR dacorten*:ti,ab,kw OR dacortin*:ti,ab,kw OR decortancyl*:ti,ab,kw OR decortin*:ti,ab,kw OR decortisyl*:ti,ab,kw OR 'de cortisyl*':ti,ab,kw OR dehydrocortisone*:ti,ab,kw OR dekortin*:ti,ab,kw OR delitison*:ti,ab,kw OR 'delta 1 dehydrocortisone*':ti,ab,kw OR 'delta cortelan*':ti,ab,kw OR deltacorten*:ti,ab,kw OR deltacortisone*:ti,ab,kw OR 'delta cortisone*':ti,ab,kw OR deltacortone*:ti,ab,kw OR 'delta dome*':ti,ab,kw OR 'delta prenovis*':ti,ab,kw OR deltison*:ti,ab,kw OR

deltra*:ti,ab,kw OR diadreson*:ti,ab,kw OR 'di adreson*':ti,ab,kw OR drazone*:ti,ab,kw OR encorton*:ti,ab,kw OR enkortolon*:ti,ab,kw OR enkorton*:ti,ab,kw OR fernisone*:ti,ab,kw OR hostacortin*:ti,ab,kw OR insone*:ti,ab,kw OR kortancyl*:ti,ab,kw OR 'liquid pred*':ti,ab,kw OR lodotra*:ti,ab,kw OR 'me korti*':ti,ab,kw OR meprison*:ti,ab,kw OR metacortandracin*:ti,ab,kw OR meticorten*:ti,ab,kw OR meticortine*:ti,ab,kw OR nisona*:ti,ab,kw OR nsc10023*:ti,ab,kw OR 'nsc 10023*':ti,ab,kw OR orasone*:ti,ab,kw OR orisane*:ti,ab,kw OR panafcort*:ti,ab,kw OR panasol*:ti,ab,kw OR paracort*:ti,ab,kw OR pehacort*:ti,ab,kw OR precort*:ti,ab,kw OR 'prednicen m*':ti,ab,kw OR prednicorm*:ti,ab,kw OR prednicot*:ti,ab,kw OR prednidib*:ti,ab,kw OR predniment*:ti,ab,kw OR 'predni tablinen*':ti,ab,kw OR prednitone*:ti,ab,kw OR pronison*:ti,ab,kw OR pronizone*:ti,ab,kw OR pulmison*:ti,ab,kw OR rayos*:ti,ab,kw OR rectodelt*:ti,ab,kw OR servisone*:ti,ab,kw OR steerometz*:ti,ab,kw OR sterapred*:ti,ab,kw OR ultracorten*:ti,ab,kw OR urtilone*:ti,ab,kw OR vb0r961hzt*:ti,ab,kw OR winpred*:ti,ab,kw

#49 'prednisolone'/de OR prednis*:ti,ab,kw OR adelcort*:ti,ab,kw OR antisolon*:ti,ab,kw OR aprednislon*:ti,ab,kw OR 'benisolonor berisolon*':ti,ab,kw OR berisolone*:ti,ab,kw OR caberdelta*:ti,ab,kw OR capsoid*:ti,ab,kw OR codelcortone*:ti,ab,kw OR 'co hydelt*:ti,ab,kw OR compresolon*:ti,ab,kw OR cortadeltona*:ti,ab,kw OR cortadeltone*:ti,ab,kw OR cortalone*:ti,ab,kw OR cortelinter*:ti,ab,kw OR cortisolone*:ti,ab,kw OR cotelone*:ti,ab,kw OR dacortin*:ti,ab,kw OR dacrotin*:ti,ab,kw OR decaprednil*:ti,ab,kw OR decortril*:ti,ab,kw OR dehydrocortex*:ti,ab,kw OR 'dehydro cortex*':ti,ab,kw OR dehydrocortisol*:ti,ab,kw OR dehydrohydrocortison*:ti,ab,kw OR 'dehydro hydrocortison*':ti,ab,kw OR delcortol*:ti,ab,kw OR 'delta1 dehydrocortisol*':ti,ab,kw OR 'delta1 dehydrohydrocortisone*':ti,ab,kw OR 'delta1 hydrocortisone*':ti,ab,kw OR deltacortef*:ti,ab,kw OR 'delta cortef*':ti,ab,kw OR deltacortenolo*:ti,ab,kw OR deltacortil*:ti,ab,kw OR deltacortoil*:ti,ab,kw OR deltacortril*:ti,ab,kw OR 'delta cortril*':ti,ab,kw OR 'delta ef cortelan*':ti,ab,kw OR 'delta f*':ti,ab,kw OR deltaglycortril*:ti,ab,kw OR deltahycortol*:ti,ab,kw OR 'delta hycortol*':ti,ab,kw OR

deltahydrocortison*:ti,ab,kw OR 'delta hydrocortison*:ti,ab,kw OR deltaophticor*:ti,ab,kw OR 'delta ophticor*:ti,ab,kw OR deltasolone*:ti,ab,kw OR deltastab*:ti,ab,kw OR 'delta stab*:ti,ab,kw OR deltidrosol*:ti,ab,kw OR deltilone*:ti,ab,kw OR deltilosol*:ti,ab,kw OR deltolasson*:ti,ab,kw OR deltosona*:ti,ab,kw OR deltosone*:ti,ab,kw OR 'depo predate*:ti,ab,kw OR dermosolon*:ti,ab,kw OR dhasolone*:ti,ab,kw OR 'diadresone f*:ti,ab,kw OR 'di adresone f*:ti,ab,kw OR diadresonf*:ti,ab,kw OR 'diadreson f*:ti,ab,kw OR 'di adreson f*:ti,ab,kw OR dicortol*:ti,ab,kw OR domucortone*:ti,ab,kw OR encortelon*:ti,ab,kw OR encortolon*:ti,ab,kw OR equisolone*:ti,ab,kw OR 'fernisolone p*:ti,ab,kw OR glistelone*:ti,ab,kw OR hefasolon*:ti,ab,kw OR 'hostacortin h*:ti,ab,kw OR hydeltra*:ti,ab,kw OR hydeltrone*:ti,ab,kw OR hydrelta*:ti,ab,kw OR hydrocortancyl*:ti,ab,kw OR hydrocortidelt*:ti,ab,kw OR hydrodeltalone*:ti,ab,kw OR hydrodeltisone*:ti,ab,kw OR hydroretrocortin*:ti,ab,kw OR inflanefran*:ti,ab,kw OR insolone*:ti,ab,kw OR 'keteocort h*:ti,ab,kw OR 'key pred*:ti,ab,kw OR lenisolone*:ti,ab,kw OR leocortol*:ti,ab,kw OR liquipred*:ti,ab,kw OR 'lygal kopftinktur n*:ti,ab,kw OR mediasolone*:ti,ab,kw OR meprisolon*:ti,ab,kw OR metacortalon*:ti,ab,kw OR metacortandralon*:ti,ab,kw OR metacortelone*:ti,ab,kw OR metiderm*:ti,ab,kw OR 'meti derm*:ti,ab,kw OR morlone*:ti,ab,kw OR mydrapred*:ti,ab,kw OR 'neo delta*:ti,ab,kw OR nisolon*:ti,ab,kw OR nsc9120*:ti,ab,kw OR 'nsc 9120*:ti,ab,kw OR opredone*:ti,ab,kw OR panafcortelone*:ti,ab,kw OR panafort*:ti,ab,kw OR paracortol*:ti,ab,kw OR phlogex*:ti,ab,kw OR preconin*:ti,ab,kw OR precortalon*:ti,ab,kw OR precortancyl*:ti,ab,kw OR precortisyl*:ti,ab,kw OR 'pre cortisyl*:ti,ab,kw OR 'predacort 50*:ti,ab,kw OR 'predaject 50*:ti,ab,kw OR 'predalone 50*:ti,ab,kw OR predartrina*:ti,ab,kw OR predartrine*:ti,ab,kw OR 'predate 50*:ti,ab,kw OR predeltilone*:ti,ab,kw OR predisole*:ti,ab,kw OR predisyr*:ti,ab,kw OR 'pred ject 50*:ti,ab,kw OR prednecort*:ti,ab,kw OR prednedome*:ti,ab,kw OR 'predne dome*:ti,ab,kw OR prednelan*:ti,ab,kw OR prednicoelin*:ti,ab,kw OR 'predni coelin*:ti,ab,kw OR prednicort*:ti,ab,kw OR 'prednifor drops*:ti,ab,kw OR 'predni helvacort*:ti,ab,kw

OR 'predni h tablinen*:ti,ab,kw OR predniment*:ti,ab,kw OR predniretard*:ti,ab,kw OR prednivet*:ti,ab,kw OR prednorsolon*:ti,ab,kw OR predonine*:ti,ab,kw OR predorgasolona*:ti,ab,kw OR predorgasolone*:ti,ab,kw OR prelon*:ti,ab,kw OR prenilone*:ti,ab,kw OR prenin*:ti,ab,kw OR prenilone*:ti,ab,kw OR preventan*:ti,ab,kw OR prezolon*:ti,ab,kw OR rubycort*:ti,ab,kw OR scherisolone*:ti,ab,kw OR serilone*:ti,ab,kw OR solondo*:ti,ab,kw OR solone*:ti,ab,kw OR solupren*:ti,ab,kw OR spiricort*:ti,ab,kw OR spolutane*:ti,ab,kw OR sterane*:ti,ab,kw OR sterolone*:ti,ab,kw OR supercortisol*:ti,ab,kw OR supercortizol*:ti,ab,kw OR taracortelone*:ti,ab,kw OR walesolone*:ti,ab,kw OR wysolone*:ti,ab,kw

#48 'paramethasone'/de OR paramethason*:ti,ab,kw OR alfa6*:ti,ab,kw OR 'alfa 6*:ti,ab,kw OR aloxicort*:ti,ab,kw OR cortiden*:ti,ab,kw OR metilar*:ti,ab,kw OR paramesone*:ti,ab,kw OR parametazon*:ti,ab,kw OR 'paramethasone*:ti,ab,kw OR paramethazone*:ti,ab,kw OR paramezone*:ti,ab,kw

#47 'methylprednisolone'/de OR methylprednisolone*:ti,ab,kw OR 'methyl prednisolone*:ti,ab,kw OR '6 methylprednisolone*:ti,ab,kw OR 'adlone 40*:ti,ab,kw OR 'adlone 80*:ti,ab,kw OR 'beta methylprednisolone*:ti,ab,kw OR depmedalone*:ti,ab,kw OR 'depmedalone*:ti,ab,kw OR 'deproject 80*:ti,ab,kw OR depopred*:ti,ab,kw OR esametone*:ti,ab,kw OR firmacort*:ti,ab,kw OR medixon*:ti,ab,kw OR 'med jec 40*:ti,ab,kw OR mednin*:ti,ab,kw OR 'medralone 80*:ti,ab,kw OR medrate*:ti,ab,kw OR medrol*:ti,ab,kw OR medrone*:ti,ab,kw OR meprednisolone*:ti,ab,kw OR meprelon*:ti,ab,kw OR mesopren*:ti,ab,kw OR methacort*:ti,ab,kw OR methylcotol*:ti,ab,kw OR 'methylpred dp*:ti,ab,kw OR methylsterolone*:ti,ab,kw OR metidrol*:ti,ab,kw OR metipred*:ti,ab,kw OR metrisone*:ti,ab,kw OR metycortin*:ti,ab,kw OR metypred*:ti,ab,kw OR metypresol*:ti,ab,kw OR neomedrone*:ti,ab,kw OR nsc19987*:ti,ab,kw OR 'nsc 19987*:ti,ab,kw OR prednol*:ti,ab,kw OR solomet*:ti,ab,kw OR 'solu decortin*:ti,ab,kw OR urbason*:ti,ab,kw OR x4w7zr7023*:ti,ab,kw

#46 'dexamethasone'/de OR dexameth*:ti,ab,kw OR adrecort*:ti,ab,kw OR adrenocot*:ti,ab,kw OR 'aeroseb dex*:ti,ab,kw OR aflucoson*:ti,ab,kw OR alfalyl*:ti,ab,kw OR

anaflogistico*:ti,ab,kw OR aphtasolon*:ti,ab,kw
OR arcodexan*:ti,ab,kw OR arcodexane*:ti,ab,kw
OR artrosone*:ti,ab,kw OR auxiron*:ti,ab,kw
OR azium*:ti,ab,kw OR bidexol*:ti,ab,kw OR
calonat*:ti,ab,kw OR cebedex*:ti,ab,kw OR
cetadexon*:ti,ab,kw OR colofeam*:ti,ab,kw
OR corsona*:ti,ab,kw OR corsone*:ti,ab,kw OR
cortastat*:ti,ab,kw OR cortidex*:ti,ab,kw OR
cortidrona*:ti,ab,kw OR cortidrone*:ti,ab,kw
OR cortisumman*:ti,ab,kw OR 'dehydro
hydrocortison*':ti,ab,kw OR delcortol*:ti,ab,kw
OR 'delta1 dehydrocortisol*':ti,ab,kw OR
'delta1 dehydrohydrocortisone*':ti,ab,kw
OR 'delta1 hydrocortisone*':ti,ab,kw OR
deltacortef*:ti,ab,kw OR 'delta cortef*':ti,ab,kw OR
deltacortenolo*:ti,ab,kw OR deltacortil*:ti,ab,kw
OR deltacortoil*:ti,ab,kw OR deltacortril*:ti,ab,kw
OR 'delta cortril*':ti,ab,kw OR 'delta ef
cortelan*':ti,ab,kw OR 'delta f*':ti,ab,kw OR
deltaglycortril*:ti,ab,kw OR deltahycortol*:ti,ab,kw
OR 'delta hycortol*':ti,ab,kw OR
deltahydrocortison*:ti,ab,kw OR 'delta
hydrocortison*':ti,ab,kw OR deltaophticor*:ti,ab,kw
OR 'delta ophticor*':ti,ab,kw OR 'dacortin*
fuerte*':ti,ab,kw OR dalalone*:ti,ab,kw OR
danasone*:ti,ab,kw OR decacortin*:ti,ab,kw
OR decadeltona*:ti,ab,kw OR
decadeltosone*:ti,ab,kw OR decaderm*:ti,ab,kw
OR decadion*:ti,ab,kw OR decadran*:ti,ab,kw
OR decadron*:ti,ab,kw OR decadrone*:ti,ab,kw
OR decaesadril*:ti,ab,kw OR decagel*:ti,ab,kw
OR decaject*:ti,ab,kw OR decalix*:ti,ab,kw
OR decameth*:ti,ab,kw OR decamethasone*:ti,ab,kw
OR decasone*:ti,ab,kw OR decaspray*:ti,ab,kw
OR decasterolone*:ti,ab,kw OR decdan*:ti,ab,kw
OR decilone*:ti,ab,kw OR decofluor*:ti,ab,kw
OR dectanyl*:ti,ab,kw OR dekadec*:ti,ab,kw
OR deltafluoren*:ti,ab,kw OR deltafluorene*:ti,ab,kw
OR dergramin*:ti,ab,kw OR deronil*:ti,ab,kw OR
desacort*:ti,ab,kw OR desadrene*:ti,ab,kw OR
desalark*:ti,ab,kw OR desameton*:ti,ab,kw OR
desametone*:ti,ab,kw OR desigdrone*:ti,ab,kw
OR dexacen*:ti,ab,kw OR dexachel*:ti,ab,kw OR
dexacort*:ti,ab,kw OR dexacortal*:ti,ab,kw OR
dexacorten*:ti,ab,kw OR dexacortin*:ti,ab,kw
OR dexacortisyl*:ti,ab,kw OR 'dexa
cortisyl*':ti,ab,kw OR 'dexa dabrosan*':ti,ab,kw
OR dexadabrosone*:ti,ab,kw OR dexadecadrol*:ti,ab,kw
OR dexadrol*:ti,ab,kw OR dexagel*:ti,ab,kw OR

dexagen*:ti,ab,kw OR dexahelvacort*:ti,ab,kw
OR dexakorti*:ti,ab,kw OR 'dexa korti*':ti,ab,kw
OR dexalien*:ti,ab,kw OR dexalocal*:ti,ab,kw OR
dexame*:ti,ab,kw OR dexamecortin*:ti,ab,kw OR
dexameson*:ti,ab,kw OR dexamesone*:ti,ab,kw OR
dexametason*:ti,ab,kw OR dexametasonone*:ti,ab,kw
OR dexamonozon*:ti,ab,kw OR dexan*:ti,ab,kw
OR dexapot*:ti,ab,kw OR dexascherosan*:ti,ab,kw
OR 'dexa scherosan*':ti,ab,kw OR
dexascherosone*:ti,ab,kw OR 'dexa
scherosone*':ti,ab,kw OR dexascherozon*:ti,ab,kw
OR 'dexa scherozon*':ti,ab,kw OR
dexason*:ti,ab,kw OR dexinoral*:ti,ab,kw OR
dexionil*:ti,ab,kw OR dexmethsone*:ti,ab,kw
OR dexona*:ti,ab,kw OR dexone*:ti,ab,kw OR
dexpak*:ti,ab,kw OR dextelan*:ti,ab,kw OR
dextenza*:ti,ab,kw OR dextrason*:ti,ab,kw
OR dexycu*:ti,ab,kw OR dezone*:ti,ab,kw OR
dibasona*:ti,ab,kw OR doxamethasone*:ti,ab,kw
OR esacortene*:ti,ab,kw OR exadion*:ti,ab,kw OR
exadione*:ti,ab,kw OR firmalone*:ti,ab,kw OR fl
uormethylprednisolon*:ti,ab,kw OR 'fluormethyl
prednisolone*':ti,ab,kw OR fluormone*:ti,ab,kw
OR fluorocort*:ti,ab,kw OR fluorodelta*:ti,ab,kw
OR fluoromethylprednisolone*:ti,ab,kw OR
fortecortin*:ti,ab,kw OR gammacorten*:ti,ab,kw OR
gammacortene*:ti,ab,kw OR grosodexon*:ti,ab,kw
OR grosodexone*:ti,ab,kw OR hemady*:ti,ab,kw OR
hexadecadiol*:ti,ab,kw OR hexadecadrol*:ti,ab,kw
OR hexadiol*:ti,ab,kw OR hexadrol*:ti,ab,kw OR
isnacort*:ti,ab,kw OR isoptodex*:ti,ab,kw OR
'isopto dex*':ti,ab,kw OR isoptomaxidex*:ti,ab,kw
OR lokalison*:ti,ab,kw OR loverine*:ti,ab,kw OR
luxazone*:ti,ab,kw OR marvidione*:ti,ab,kw OR
maxidex*:ti,ab,kw OR mediamethasone*:ti,ab,kw
OR megacortin*:ti,ab,kw OR mephameson*:ti,ab,kw
OR mephamesone*:ti,ab,kw OR
metasolon*:ti,ab,kw OR metasolone*:ti,ab,kw OR
methazonion*:ti,ab,kw OR methazonione*:ti,ab,kw
OR methylfluorprednisolone*:ti,ab,kw OR
mexasone*:ti,ab,kw OR millicorten*:ti,ab,kw OR
millicortenol*:ti,ab,kw OR mk125*:ti,ab,kw OR
'mk 125*':ti,ab,kw OR mymethasone*:ti,ab,kw OR
neoforderx*:ti,ab,kw OR neofordex*:ti,ab,kw OR
nisomethasone*:ti,ab,kw OR novocort*:ti,ab,kw
OR nsc34521*:ti,ab,kw OR 'nsc 34521*':ti,ab,kw
OR opticorten*:ti,ab,kw OR opticortinol*:ti,ab,kw
OR oradexan*:ti,ab,kw OR oradexon*:ti,ab,kw
OR oradexone*:ti,ab,kw OR orgadrone*:ti,ab,kw
OR ozurdex*:ti,ab,kw OR pidexon*:ti,ab,kw OR

policort*:ti,ab,kw OR posurdex*:ti,ab,kw OR
 'predni f*':ti,ab,kw OR prodexona*:ti,ab,kw OR
 prodexone*:ti,ab,kw OR sanamethasone*:ti,ab,kw
 OR santenson*:ti,ab,kw OR santeson*:ti,ab,kw
 OR sawasone*:ti,ab,kw OR solurex*:ti,ab,kw OR
 spoloven*:ti,ab,kw OR sterasone*:ti,ab,kw OR
 thilodexine*:ti,ab,kw OR triamcimetil*:ti,ab,kw OR
 vexamet*:ti,ab,kw OR visumetazone*:ti,ab,kw OR
 visumethazone*:ti,ab,kw
 #45 'desoximetasone'/de OR desoxi*:ti,ab,kw
 OR 17?desoxymethasone*:ti,ab,kw OR
 '17 desoxymethasone*':ti,ab,kw OR 'a
 41304*':ti,ab,kw OR cendexsone*:ti,ab,kw OR
 deoxon*:ti,ab,kw OR deoxymethasone*:ti,ab,kw
 OR deoxymethazone*:ti,ab,kw OR
 dercason*:ti,ab,kw OR desicort*:ti,ab,kw
 OR desoxydexamehasone*:ti,ab,kw
 OR desoxymetasone*:ti,ab,kw OR
 desoxymethasone*:ti,ab,kw OR dethasone*:ti,ab,kw
 OR dexocort*:ti,ab,kw OR esperson*:ti,ab,kw
 OR flubason*:ti,ab,kw OR hoe304*:ti,ab,kw
 OR 'hoe 304*':ti,ab,kw OR ibaril*:ti,ab,kw
 OR inerson*:ti,ab,kw OR 'r?17?desoxy
 dexamethasone*':ti,ab,kw OR r2113*:ti,ab,kw
 OR 'r 2113*':ti,ab,kw OR stiedex*:ti,ab,kw OR
 topcort*:ti,ab,kw OR topicort*:ti,ab,kw OR
 topiderm*:ti,ab,kw OR topisolon*:ti,ab,kw
 #44 'desoximetasone'/de
 #43 'betamethasone'/de OR betamethason*:ti,ab,kw
 OR becasone*:ti,ab,kw OR beprogel*:ti,ab,kw
 OR betacortril*:ti,ab,kw OR betadexamethasone*:ti,ab,kw
 OR betamethasolone*:ti,ab,kw OR 'beta
 methason*':ti,ab,kw OR 'beta phos?ac*':ti,ab,kw
 OR betason*:ti,ab,kw OR betnasol*:ti,ab,kw OR
 betnelan*:ti,ab,kw OR betnovate*:ti,ab,kw OR
 betsolan*:ti,ab,kw OR betsolon*:ti,ab,kw OR
 betsoart*:ti,ab,kw OR celestan*:ti,ab,kw OR
 celestene*:ti,ab,kw OR celeston*:ti,ab,kw OR
 cellederm*:ti,ab,kw OR cidoten*:ti,ab,kw OR
 dermobet*:ti,ab,kw OR diprolen*:ti,ab,kw OR
 flubenisolone*:ti,ab,kw OR methasone*:ti,ab,kw
 OR nsc39470*:ti,ab,kw OR 'nsc 39470*':ti,ab,kw OR
 ophthamesone*:ti,ab,kw OR prednisolone*:ti,ab,kw
 #42 'glucocorticoid'/exp OR glucocortico*:ti,ab,kw
 #41 #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34
 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40
 #40 (diagnos* NEAR/3 block*):ti,ab,kw
 #39 (cervical NEAR/3 (block* OR anesthes* OR
 anaesthes*)):ti,ab,kw
 #38 'autonomic block*':ti,ab,kw
 #37 'chemical neurolys*':ti,ab,kw
 #36 chemodenervat*:ti,ab,kw OR 'chemo
 denervat*':ti,ab,kw
 #35 (nerve NEAR/3 block*):ti,ab,kw
 #34 'cervical plexus block'/de
 #33 'nerve block'/de
 #32 (('intra articular*' OR intraarticular* OR 'intra spi
 nal*' OR intraspinal* OR epidural* OR 'epi dural*' OR
 extradural* OR 'extra dural*' OR peridural* OR 'peri dural*' OR
 intrathecal* OR 'intra thecal*') NEAR/3 (admin* OR block* OR
 deliver* OR infus* OR inject* OR medicat* OR treat*)):ti,ab,kw
 #31 (joint NEAR/3 (inject* OR infus*)):ti,ab,kw
 #30 'epidural drug administration'/de
 #29 'intraspinal drug administration'/de
 #28 'injection'/exp
 #27 #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18
 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR
 #25 OR #26
 #26 (facet NEAR/3 vertebra*):ti,ab,kw
 #25 zygapophyseal:ti,ab,kw OR zygapophysial:ti,ab,kw
 #24 'facet joint*':ti,ab,kw
 #23 'zygapophyseal joint'/de
 #22 ((c1 OR c2 OR c3 OR c4) NEAR/3 vertebra*):ti,ab,kw
 #21 epistroph*:ti,ab,kw
 #20 (axis NEAR/3 (cervical OR vertebra*)):ti,ab,kw
 #19 (cervical NEAR/3 (axis OR vertebra*)):ti,ab,kw
 #18 'first cervical vertebra'/de OR 'second cervical ver
 tebra'/de OR 'third cervical vertebra'/de OR 'fourth
 cervical vertebra'/de
 #17 'cervical vertebra'/de
 #16 'cervical plexus*':ti,ab,kw OR 'plexus
 cervicalis':ti,ab,kw
 #15 'cervical plexus'/de
 #14 'articulatio atlantooccipitalis':ti,ab,kw
 OR atlantooccipital:ti,ab,kw OR 'atlanto
 occipital':ti,ab,kw OR atloldooccipital:ti,ab,kw
 OR 'atloldo occipital':ti,ab,kw OR
 cervicooccipital:ti,ab,kw OR 'cervico
 occipital':ti,ab,kw OR craniocervical:ti,ab,kw OR 'cra
 nio cervical':ti,ab,kw OR craniovertebral:ti,ab,kw OR
 'cranio vertebral':ti,ab,kw OR crueilhier:ti,ab,kw
 OR occipitoatlantal:ti,ab,kw OR 'occipito
 atlantal':ti,ab,kw OR occipitoatlas:ti,ab,kw OR 'oc
 cipito atlas':ti,ab,kw OR occipitocervical:ti,ab,kw OR
 'occipito cervical':ti,ab,kw

- #42 (cervical NEAR/3 (block* OR anesthes* OR anaesthes*)):ti,ab,kw 536
- #43 (diagnos* NEAR/3 block*):ti,ab,kw 405
- #44 {OR #30-#43} 24338
- #45 [mh Glucocorticoids] or glucocorticoid*:ti,ab,kw 8875
- #46 [mh ^Betamethasone]1102
- #47 (betamethason* OR becasone* OR beprogel* OR betacortril* OR betadexamethasone* OR betamethasolone* OR beta-methason* OR beta-phosac* OR betason* OR betnasol* OR betnelan* OR betnovate* OR betsolan* OR betsolon* OR betsoport* OR celestan* OR celestene* OR celeston* OR cellestoderm* OR cidoten* OR dermobet* OR diprolen* OR flubenisolone* OR methasone* OR nsc39470* OR nsc-39470* OR ophtamesone* OR prednisolone*):ti,ab,kw 9802
- #48 [mh ^Desoximetasone] 32
- #49 (desoxi* OR (17 NEXT desoxymethasone*) OR (A NEXT 41304*) OR cendexone* OR deoxon* OR deoxymethasone* OR deoxymethazone* OR decason* OR desicort* OR desoxydexamethasone* OR desoxymetasone* OR desoxymethasone* OR dethasone* OR dexocort* OR esperson* OR flubason* OR hoe304* OR hoe-304* OR ibaril* OR inerson* OR r2113* OR r-2113* OR stiedex* OR topcort* OR topicort* OR topiderm* OR topisolon*):ti,ab,kw 101
- #50 [mh ^Dexamethasone] 4656
- #51 (dexameth* OR adrecort* OR adrenocot* OR (aeroseb NEXT dex*) OR aflucoson* OR alfaly* OR anaflogistico* OR aphtasolon* OR arcodexan* OR arcodexane* OR artrosone* OR auxiron* OR azium* OR bidexol* OR calonat* OR cebedex* OR cetadexon* OR colofeam* OR corsona* OR corsone* OR cortastat* OR cortidex*):ti,ab,kw 12338
- #52 (cortidrona* OR cortidrone* OR cortisumman* OR (dehydro NEXT hydrocortison*) OR delcortol* OR (delta1 NEXT dehydrocortisol*) OR deltacortef* OR (delta NEXT cortef*) OR deltacortenolo* OR deltacortil* OR deltacortoil* OR deltacortril* OR (delta NEXT cortril*) OR deltaglycortril* OR deltahycortol* OR (delta NEXT hycortol*) OR deltahydrocortison*):ti,ab,kw 5
- #53 ((delta NEXT hydrocortison*) OR deltaophticor* OR (delta NEXT ophticor*) OR (dacortin* NEXT fuerte*) OR dalalone* OR danasone* OR decacortin* OR decadeltosona* OR decadeltosone* OR decaderm* OR decadion* OR decadran* OR decadron* OR decadronal* OR decadrone* OR decaesadril* OR decagel*):ti,ab,kw 41
- #54 (decaject* OR decalix* OR decameth* OR decamethasone* OR decasone* OR decaspray* OR decasterolone* OR decdan* OR decilone* OR decofluor* OR dectancyl* OR dekcort* OR delladec* OR deltafluoren* OR deltafluorene* OR dergramin* OR deronil* OR desacort* OR desadrene* OR desalark* OR desameton* OR desametone* OR desig-dron* OR dexacen* OR dexachel* OR dexacort* OR dexacortal* OR dexacorten* OR dexacortin* OR dexacortisyl*):ti,ab,kw 22
- #55 ((dexa NEXT cortisyl*) OR (dexa NEXT dabrosan*) OR dexadabrosan* OR dexadecadrol* OR dexadrol* OR dexagel* OR dexagen* OR dexahelvacort* OR dexakorti* OR dexa NEXT korti* OR dexalien* OR dexalocal* OR dexame* OR dexamecortin* OR dexameson* OR dexamesone* OR dexametason* OR dexametasone* OR dexamonozon* OR dexan* OR dexapot* OR dexascherosan* OR (dexa NEXT scherosan*)):ti,ab,kw 12431
- #56 (dexascherosan* OR (dexa NEXT scheroson*) OR dexascherozon* OR (dexa NEXT scherozon*) OR dexason* OR dexinoral* OR dexionil* OR dexmethasone* OR dexona* OR dexone* OR dexpak* OR dextelan* OR dextenza*):ti,ab,kw 40
- #57 dextrasone* OR dexycu* OR dezone* OR dibasona* OR doxamethasone* OR esacortene* OR exadion* OR exadione* OR firmalone* OR (fluormethyl NEXT prednisolone*):ti,ab,kw 10
- #58 (fluormethylprednisolon* OR (fluormethyl NEXT prednisolone*) OR fluormone* OR fluorocort* OR fluorodelta* OR fluoromethylprednisolone* OR fortecortin* OR gammacorten* OR gammacortene* OR grosodexon* OR grosodexone* OR hemady* OR hexadecadiol* OR hexadecadrol* OR hexadiol* OR hexadrol* OR isnacort*):ti,ab,kw 57
- #59 (isoptodex* OR (isopto NEXT dex*) OR isoptomaxidex* OR lokalison* OR loverine* OR luxazone* OR marvidione* OR maxidex* OR mediamethasone* OR megacortin* OR mephameson* OR mephamesone* OR metasolon* OR metasolone* OR methazonion* OR methazonione* OR methylfluorprednisolone*):ti,ab,kw 32
- #60 (mexasone* OR millicorten* OR millicortenol* OR mk125* OR (mk NEXT 125*) OR mymethasone* OR neoforderx* OR neofordex* OR nisomethasona* OR novocort* OR nsc34521*):ti,ab,kw 1
- #61 ((nsc NEXT 34521*) OR opticorten* OR opticortinol* OR oradexan* OR oradexon* OR oradexone* OR orgadrone* OR ozurdex* OR pidexon* OR policort*

- OR posurdex* OR prodexona* OR prodexone* OR sanamethasone* OR santenson* OR santeson* OR sawasone* OR solurex* OR spoloven* OR sterasone* OR thilodexine* OR triamcimetil* OR vexamet* OR visumetazone* OR visumethazone*):ti,ab,kw 135
- #62 [mh ^Methylprednisolone] 2715
- #63 (methylprednisolone* OR methyl NEXT prednisolone* OR 6 NEXT methylprednisolone* OR adlone* OR beta-methylprednisolone* OR betamethylprednisolone* OR depmedalone* OR dep-medalone* OR depoject* OR depopred* OR esametone* OR firmacort* OR medixon* OR mednin* OR medralone* OR medrate* OR medrol* OR medrone* OR meprednisolone* OR meprelon* OR mesopren* OR methacort* OR methylcotol*):ti,ab,kw 5605
- #64 (methylpredspacesdp* OR methylsterolone* OR metidrol* OR metipred* OR metrisone* OR metycortin* OR metypred* OR metypresol* OR neome-drone* OR nsc19987* OR nsc NEXT 19987* OR prednol* OR solomet* OR solu NEXT decortin* OR urbason* OR x4w7zr7023*):ti,ab,kw 34
- #65 [mh ^Paramethasone] 13
- #66 (paramethason* OR alfa6* OR (alfa NEXT 6*) OR aloxicort* OR cortiden* OR metilar* OR paramesone* OR parametazon* OR para NEXT methasone* OR paramethazone* OR paramezone*):ti,ab,kw 60
- #67 [mh ^Prednisolone] 3062
- #68 (prednis* OR adelcort* OR antisolon* OR aprednislon* OR (benisolonor NEXT berisolone*) OR berisolone* OR caberdelta* OR capsoid* OR codelcortone* OR (co NEXT hydeltra*) OR compresolon* OR cortadeltona* OR cortadeltone* OR cortalone* OR cortelinter* OR cortisolone* OR cotolone* OR dacortin* OR dacrotin* OR decaprednil* OR decortril* OR dehydrocortex* OR (dehydro NEXT cortex*) OR dehydrocortisol* OR dehydrohydrocortison* OR deltasolone* OR deltastab* OR (delta NEXT stab*):ti,ab,kw 16417
- #69 (deltidrosol* OR deltilone* OR deltilolon* OR deltolasson* OR deltosona* OR deltosone* OR (depo NEXT predate*) OR dermosolon* OR dhasolone*):ti,ab,kw 0
- #70 ((diadresone*) OR (di NEXT adresone*) OR diadreson* OR dicortol* OR domu cortone*):ti,ab,kw 1
- #71 (encortelon* OR encortolon* OR equisolon* OR (fernisolone NEXT p*) OR glistelone* OR hefasolon* OR hostacortin* OR hydeltra* OR hydeltrone* OR hydreltra*):ti,ab,kw 1
- #72 (hydrocortancyl* OR hydrocortidelt* OR hydro-deltalone* OR hydrodeltisone* OR hydroretrocortin* OR inflanefran* OR insolone* OR keteocort* OR (key NEXT pred*) OR lenisolone* OR leocortol*):ti,ab,kw 135
- #73 (liquipred* OR (lygal NEXT kopftinktur NEXT n*) OR mediasolone* OR meprisolon* OR metacortalon* OR metacortandralon* OR metacortelone* OR met-cortelone* OR metiderm* OR (meti NEXT dermat*) OR morlone* OR mydrapred* OR (neo NEXT delta*) OR nisolon* OR nsc9120* OR (nsc NEXT 9120*) OR opredsone* OR panafcortelone* OR panafcortolone* OR panafort* OR paracortol* OR phlogex* OR preconin* OR precortalon* OR precortancyl* OR precortisyl* OR (pre NEXT cortisyl*) OR predacort* OR predaject* OR predalone** OR predartrina* OR predartrine* OR predeltilone* OR predisole*):ti,ab,kw 7
- #74 (predisyr* OR prednecort* OR prednedome* OR predne NEXT dome* OR prednelan* OR prednicoelin* OR (predni NEXT coelin*) OR prednicort* OR prednifor* OR (predni NEXT helvacort*) OR predniment* OR predniretard* OR prednivet* OR prednorsolon* OR predonine* OR predorgasolona* OR predorgasolone* OR prelon* OR prenilone* OR prenin* OR prenolone* OR preventan* OR prezolon* OR rubycort* OR scherisolone* OR serilone* OR solondo* OR solone* OR solupren* OR spiricort* OR spolutane* OR sterane* OR sterolone* OR supercortisol* OR supercortizol* OR taracortelone* OR walesolone* OR wysolone*):ti,ab,kw 18
- #75 [mh ^Prednisone] 4029
- #76 (prednison* OR ancortone* OR apo NEXT prednisone* OR biocortone* OR colisone* OR cortan* OR cortidelt* OR cortiprex* OR cutason* OR dacorten* OR dacortin* OR decortancyl* OR decortin* OR decortisyl* OR de NEXT cortisyl* OR dehydrocortisone* OR dekortin* OR delitison* OR delta NEXT cortelan* OR deltacorten* OR deltacortisone* OR delta-cortisone* OR deltacortone* OR deltison* OR deltra* OR diadreson* OR OR drazone* OR encorton* OR enkortolon* OR enkorton* OR fernisone* OR hostacortin* OR insone* OR kortancyl* OR lodotra* OR meprison* OR metacortandracin*):ti,ab,kw 9890
- #77 (meticorten* OR meticortine* OR nisona* OR nsc10023* OR nsc NEXT 10023* OR orasone* OR orisane* OR panafcort* OR panasol* OR paracort* OR pehacort* OR precort* OR prednicen NEXT m* OR prednicorm* OR prednicot* OR prednidib*

OR predniment* OR predni NEXT tablinen* OR prednitone* OR pronison* OR pronizone* OR pulmison* OR rayos* OR rectodelt* OR servisone* OR steerometz* OR sterapred* OR ultracorten* OR urtilone* OR vb0r961hzt* OR winpred*):ti,ab,kw 41

#78 [mh ^Triamcinolone] 647

#79 (triamcinolon* OR 1zk20vi6ty* OR acetocot* OR adcortyl* OR aristocort* OR aristodan* OR azmacor* OR celeste* OR cl19823* OR cl NEXT 19823* OR clinacort*):ti,ab,kw 3291

#80 (clinalog* OR delphicort* OR fluoxiprednisolone* OR fluoxyprednisolone* OR kenacort* OR korticoid* OR ledercort* OR omcilon* OR polcortolon* OR rp8357*):ti,ab,kw 73

#81 (simacort* OR sterocort* OR tramcinolone* OR triacortyl* OR triamcort* OR triamcot* OR triam NEXT forte* OR triamonide* OR triamsicort* OR triancinolon* OR volon*):ti,ab,kw 189

#82 [mh ^"Triamcinolone Acetonide"] 1118

#83 (aftab* OR aftach* OR ahbina* OR albicort* OR aquatain* OR aristocort* OR aristoderm* OR aris togel* OR azmacort* OR centocort* OR cinolar* OR cinonide* OR OR f446c597ka* OR facort* OR flutex* OR flutone* OR fougera* OR ftorocort* OR gemicort* OR generlog* OR kenac* OR kenalog* OR kenalone* OR kenlog* OR ledercort* OR manolone*):ti,ab,kw 200

#84 (metoral* OR nasacort* OR nasacor NEXT aq* OR nincort* OR oracort* OR oralog* OR oralone* OR oramedy* OR orrepaste* OR panalog* OR pokkorton* OR shincort* OR solodelf* OR tibicorten* OR tibicorten* OR tramacin* OR triacet* OR triacort* OR triaderm* OR trianide* OR triatex* OR tricort* OR triderm* OR tridez* OR triesence* OR trigon* OR trikort* OR trinolone* OR trivaris* OR trymex* OR vetalog* OR vistrec* OR zilretta*):ti,ab,kw 542

#85 [mh ^Cortisone] 151

#86 (cortison* OR 883wkn7w8x* OR adrenaalex* OR adreson* OR corlin* OR cortadren* OR cortagen* OR cortandren* OR cortane* OR cortisal* OR cortisate* OR cortistal* OR cortivite* OR cortogen* OR cortone* OR incorlin* OR incortin* OR nsc9703* OR ricortex* OR scheroson* OR v27w9254fz*):ti,ab,kw 603

#87 [mh ^Fludrocortisone] 119

#88 (fludrocortisone* OR alflorone* OR alpha NEXT fluorohydrocortisone* OR astonin* OR florinef* OR fludrocortisol* OR fludrocortone* OR

fludrohydrocortisone*):ti,ab,kw 246

#89 (fludrone* OR fluohydrisone* OR fluohydrocortisone* OR fluorhydrocortisonum* OR fluorinef* OR fluorocortisone* OR fluorohydrocortisone* OR flurinef* OR fluohydrocortisone* OR u0476m545b*):ti,ab,kw 8

#90 {OR #45-#89} 42202

#91 #6 AND (#13 OR #29) AND (#44 OR #90) in Trials 65

CINAHL Plus with Full Text (Ebsco)

Searched April 21, 2020.
85 records retrieved.

S57 S55 NOT S56

S56 PT case study

S55 S4 AND (S10 OR 26) AND (S40 OR S54)

S54 S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53

S53 ((TI fludrocortisone* OR AB fludrocortisone*) OR (TI 9alpha-fludrocortisone* OR AB 9alpha-fludrocortisone*) OR (TI 9-alpha-fludrohydrocortisone* OR AB 9-alpha-fludrohydrocortisone*) OR (TI 9-alpha-fluoro-17-hydroxycorticosterone* OR AB 9-alpha-fluoro-17-hydroxycorticosterone*) OR (TI 9alpha-fluorocortisol* OR AB 9alpha-fluorocortisol*) OR (TI 9alpha-fluorocortisol* OR AB 9alpha-fluorocortisol*) OR (TI 9-alpha-fluorocortisol* OR AB 9-alpha-fluorocortisol*) OR (TI 9alpha-fluorohydrocortisone* OR AB 9alpha-fluorohydrocortisone*) OR (TI 9alpha-fluorohydrocortisone* OR AB 9alpha-fluorohydrocortisone*) OR (TI 9-alpha-fluorohydrocortisone* OR AB 9-alpha-fluorohydrocortisone*) OR (TI 9-alpha-fluorohydrocortisone* OR AB 9-alpha-fluorohydrocortisone*) OR (TI 9-fluoro-17-hydroxycortisone* OR AB 9-fluoro-17-hydroxycortisone*) OR (TI 9-fluorocortisol* OR AB 9-fluorocortisol*) OR (TI 9-fluorohydrocortisone* OR AB 9-fluorohydrocortisone*) OR (TI alflorone* OR AB alflorone*) OR (TI alpha-fluorohydrocortisone* OR AB alpha-fluorohydrocortisone*) OR (TI astonin* OR AB astonin*) OR (TI fcol* OR AB fcol*) OR (TI f-cortef* OR AB f-cortef*) OR (TI florinef* OR AB florinef*) OR (TI fludrocortisol* OR AB fludrocortisol*) OR (TI fludrocortone* OR AB fludrocortone*) OR (TI fludrohydrocortisone* OR AB fludrohydrocortisone*) OR (TI fludrone* OR AB fludrone*) OR (TI fluohydrisone* OR AB fluohydrisone*) OR (TI fluohydrocortisone* OR AB fluohydrocortisone*) OR (TI fluorhydrocortisonum* OR AB fluorhydrocortisonum*) OR (TI fluorinef* OR AB fluorinef*) OR (TI fluorocortisone* OR AB fluorocortisone*) OR (TI fluorohydrocortisone*

OR AB fluorohydrocortisone*) OR (TI flurinef* OR AB flurinef*) OR (TI flurohydrocortisone* OR AB flurohydrocortisone*) OR (TI u0476m545b* OR AB u0476m545b*)

S52 (MH "Cortisone") OR (((TI cortison* OR AB cortison*) OR (TI 883wkn7w8x* OR AB 883wkn7w8x*) OR (TI adrenalex* OR AB adrenalex*) OR (TI adre-son* OR AB adre-son*) OR (TI corlin* OR AB corlin*) OR (TI cortadren* OR AB cortadren*) OR (TI cortagen* OR AB cortagen*) OR (TI cortandren* OR AB cortandren*) OR (TI cortane* OR AB cortane*) OR (TI cortisol* OR AB cortisol*) OR (TI cortisate* OR AB cortisate*) OR (TI cortistal* OR AB cortistal*) OR (TI cortivite* OR AB cortivite*) OR (TI cortogen* OR AB cortogen*) OR (TI cortone* OR AB cortone*) OR (TI incorlin* OR AB incorlin*) OR (TI incortin* OR AB incortin*) OR (TI kendall-compound-e* OR AB kendall-compound-e*) OR (TI nsc9703* OR AB nsc9703*) OR (TI nsc-9703* OR AB nsc-9703*) OR (TI ricortex* OR AB ricortex*) OR (TI scheroson* OR AB scheroson*) OR (TI v27w9254fz* OR AB v27w-9254fz*) OR (TI wintersteiner-compound-f* OR AB wintersteiner-compound-f*)))

S51 ((TI triam* OR AB triam*) OR (TI aftab* OR AB aftab*) OR (TI aftach* OR AB aftach*) OR (TI ahbina* OR AB ahbina*) OR (TI albicort* OR AB albicort*) OR (TI allegra-nasal* OR AB allegra-nasal*) OR (TI aquatain* OR AB aquatain*) OR (TI aristocort-a* OR AB aristocort-a*) OR (TI aristoderm* OR AB aristoderm*) OR (TI aristogel* OR AB aristogel*) OR (TI azmacort* OR AB azmacort*) OR (TI centocort* OR AB centocort*) OR (TI cinolar* OR AB cinolar*) OR (TI cinonide* OR AB cinonide*) OR (TI denkacort-forte* OR AB denkacort-forte*) OR (TI f446c597ka* OR AB f446c597ka*) OR (TI facort* OR AB facort*) OR (TI flutex* OR AB flutex*) OR (TI flutone* OR AB flutone*) OR (TI fougera* OR AB fougera*) OR (TI ftorocort* OR AB ftorocort*) OR (TI gemicort* OR AB gemicort*) OR (TI generlog* OR AB generlog*) OR (TI invert-plaster* OR AB invert-plaster*) OR (TI kemzid* OR AB kemzid*) OR (TI kenac* OR AB kenac*) OR (TI kenalog* OR AB kenalog*) OR (TI kena-log* OR AB kena-log*) OR (TI kenalone* OR AB kenalone*) OR (TI kenlog* OR AB kenlog*) OR (TI ledercort-a* OR AB ledercort-a*) OR (TI ledercort-d* OR AB ledercort-d*) OR (TI manolone* OR AB manolone*) OR (TI metoral* OR AB metoral*) OR (TI nasacort* OR AB nasacort*) OR (TI nasocor-aq* OR AB nasocor-aq*) OR (TI nincort* OR AB nincort*) OR (TI oracort* OR AB oracort*) OR

(TI oralog* OR AB oralog*) OR (TI oralone* OR AB oralone*) OR (TI oramedy* OR AB oramedy*) OR (TI orrepaste* OR AB orrepaste*) OR (TI panalog* OR AB panalog*) OR (TI pokkortolon* OR AB pokkortolon*) OR (TI shincort* OR AB shincort*) OR (TI solodelf* OR AB solodelf*) OR (TI steronase-aq* OR AB steronase-aq*) OR (TI tibicorten* OR AB tibicorten*) OR (TI tibiocorten* OR AB tibiocorten*) OR (TI tramacin* OR AB tramacin*) OR (TI triacet* OR AB triacet*) OR (TI triacort* OR AB triacort*) OR (TI triaderm* OR AB triaderm*) OR (TI tri-anemul* OR AB tri-anemul*) OR (TI trianide* OR AB trianide*) OR (TI triatex* OR AB triatex*) OR (TI tricort* OR AB tricort*) OR (TI triderm* OR AB triderm*) OR (TI tridez* OR AB tridez*) OR (TI triesence* OR AB triesence*) OR (TI trigon* OR AB trigon*) OR (TI trikort* OR AB trikort*) OR (TI trinolone* OR AB trinolone*) OR (TI trivaris* OR AB trivaris*) OR (TI trymex* OR AB trymex*) OR (TI vetalog* OR AB vetalog*) OR (TI vistrec* OR AB vistrec*) OR (TI yn102* OR AB yn102*) OR (TI yn-102* OR AB yn-102*) OR (TI zilretta* OR AB zilretta*))

S50 (MH "Triamcinolone") OR (((TI triamcinolon* OR AB triamcinolon*) OR (TI 1zk20vi6ty* OR AB 1zk20vi6ty*) OR (TI acetocot* OR AB acetocot*) OR (TI adcortyl* OR AB adcortyl*) OR (TI "aristocort* aristodan*" OR AB "aristocort* aristodan*") OR (TI azmacor* OR AB azmacor*) OR (TI celeste* OR AB celeste*) OR (TI cl19823* OR AB cl19823*) OR (TI cl-19823* OR AB cl-19823*) OR (TI clinacort* OR AB clinacort*) OR (TI clinalog* OR AB clinalog*) OR (TI delphicort* OR AB delphicort*) OR (TI fluoxiprednisolone* OR AB fluoxiprednisolone*) OR (TI fluoxy-prednisolone* OR AB fluoxyprednisolone*) OR (TI kenacort* OR AB kenacort*) OR (TI ken-jec-40* OR AB ken-jec-40*) OR (TI korticoid* OR AB korticoid*) OR (TI ledercort* OR AB ledercort*) OR (TI omcilon* OR AB omcilon*) OR (TI polcortolon* OR AB polcortolon*) OR (TI rp8357* OR AB rp8357*) OR (TI rp-8357* OR AB rp-8357*) OR (TI simacort* OR AB simacort*) OR (TI sterocort* OR AB sterocort*) OR (TI tac-3* OR AB tac-3*) OR (TI triamcinolone* OR AB triamcinolone*) OR (TI triacortyl* OR AB triacortyl*) OR (TI triam-a* OR AB triam-a*) OR (TI triamcort* OR AB triamcort*) OR (TI triamcot* OR AB triamcot*) OR (TI triam-forte* OR AB triam-forte*) OR (TI triamonide-40* OR AB triamonide-40*) OR (TI triamsicort* OR AB triamsicort*) OR (TI triancinolone* OR AB triancinolone*) OR (TI u-tri-lone* OR AB u-tri-lone*) OR (TI volon* OR AB volon*)))

S49 (MH "Prednisone") OR (((TI prednison* OR AB prednison*) OR (TI ancortone* OR AB ancortone*) OR (TI apo-prednisone* OR AB apo-prednisone*) OR (TI biocortone* OR AB biocortone*) OR (TI colisone* OR AB colisone*) OR (TI cortan* OR AB cortan*) OR (TI cortidelt* OR AB cortidelt*) OR (TI cortiprex* OR AB cortiprex*) OR (TI cutason* OR AB cutason*) OR (TI dacorten* OR AB dacorten*) OR (TI dacortin* OR AB dacortin*) OR (TI decortancyl* OR AB decortancyl*) OR (TI decortin* OR AB decortin*) OR (TI decortisyl* OR AB decortisyl*) OR (TI de-cortisyl* OR AB de-cortisyl*) OR (TI dehydrocortisone* OR AB dehydrocortisone*) OR (TI dekortin* OR AB dekortin*) OR (TI delitison* OR AB delitison*) OR (TI delta-1-dehydrocortisone* OR AB delta-1-dehydrocortisone*) OR (TI delta-cortelan* OR AB delta-cortelan*) OR (TI deltacorten* OR AB deltacorten*) OR (TI deltacortison* OR AB deltacortison*) OR (TI delta-cortison* OR AB delta-cortison*) OR (TI deltacortone* OR AB deltacortone*) OR (TI delta-dome* OR AB delta-dome*) OR (TI delta-prenovis* OR AB delta-prenovis*) OR (TI deltison* OR AB deltison*) OR (TI deltra* OR AB deltra*) OR (TI diadreson* OR AB diadreson*) OR (TI di-adreson* OR AB di-adreson*) OR (TI drazone* OR AB drazone*) OR (TI encorton* OR AB encorton*) OR (TI enkortolon* OR AB enkortolon*) OR (TI enkorton* OR AB enkorton*) OR (TI fernisone* OR AB fernisone*) OR (TI hostacortin* OR AB hostacortin*) OR (TI insone* OR AB insone*) OR (TI kortancyl* OR AB kortancyl*) OR (TI liquid-pred* OR AB liquid-pred*) OR (TI lodotra* OR AB lodotra*) OR (TI me-korti* OR AB me-korti*) OR (TI meprison* OR AB meprison*) OR (TI metacortandracin* OR AB metacortandracin*) OR (TI meticorten* OR AB meticorten*) OR (TI meticortine* OR AB meticortine*) OR (TI nisona* OR AB nisona*) OR (TI nsc10023* OR AB nsc10023*) OR (TI nsc-10023* OR AB nsc-10023*) OR (TI orasone* OR AB orasone*) OR (TI orisane* OR AB orisane*) OR (TI panafcort* OR AB panafcort*) OR (TI panasol* OR AB panasol*) OR (TI paracort* OR AB paracort*) OR (TI pehacort* OR AB pehacort*) OR (TI precort* OR AB precort*) OR (TI prednicen-m* OR AB prednicen-m*) OR (TI prednicorm* OR AB prednicorm*) OR (TI prednicot* OR AB prednicot*) OR (TI prednidib* OR AB prednidib*) OR (TI predniment* OR AB predniment*) OR (TI predni-tablinen* OR AB predni-tablinen*) OR (TI prednitone* OR AB prednitone*) OR (TI pronison* OR AB pronison*) OR (TI pronizone* OR AB pronizone*) OR (TI pulmison* OR AB pulmison*) OR (TI

rayos* OR AB rayos*) OR (TI rectodelt* OR AB rectodelt*) OR (TI servisone* OR AB servisone*) OR (TI steerometz* OR AB steerometz*) OR (TI sterapred* OR AB sterapred*) OR (TI ultracorten* OR AB ultracorten*) OR (TI urtilone* OR AB urtilone*) OR (TI vb0r961hzt* OR AB vb0r961hzt*) OR (TI winpred* OR AB winpred*)))

S48 (MH "Prednisolone") OR (((TI prednis* OR AB prednis*) OR (TI adelcort* OR AB adelcort*) OR (TI antisolon* OR AB antisolon*) OR (TI aprednislon* OR AB aprednislon*) OR (TI "benisolonor berisolon*" OR AB "benisolonor berisolon*") OR (TI berisolone* OR AB berisolone*) OR (TI caberdelta* OR AB caberdelta*) OR (TI capsoid* OR AB capsoid*) OR (TI codelcortone* OR AB codelcortone*) OR (TI cohydeltra* OR AB cohydeltra*) OR (TI compresolon* OR AB compresolon*) OR (TI cortadeltona* OR AB cortadeltona*) OR (TI cortadeltone* OR AB cortadeltone*) OR (TI cortalone* OR AB cortalone*) OR (TI cortelinter* OR AB cortelinter*) OR (TI cortisolone* OR AB cortisolone*) OR (TI cotalone* OR AB cotalone*) OR (TI dacortin* OR AB dacortin*) OR (TI dacrotin* OR AB dacrotin*) OR (TI decaprednil* OR AB decaprednil*) OR (TI decortril* OR AB decortril*) OR (TI dehydrocortex* OR AB dehydrocortex*) OR (TI dehydro-cortex* OR AB dehydro-cortex*) OR (TI dehydrocortisol* OR AB dehydrocortisol*) OR (TI dehydrohydrocortison* OR AB dehydrohydrocortison*) OR (TI dehydro-hydrocortison* OR AB dehydro-hydrocortison*) OR (TI delcortol* OR AB delcortol*) OR (TI delta1-dehydrocortisol* OR AB delta1-dehydrocortisol*) OR (TI delta1-dehydrohydrocortisone* OR AB delta1-dehydrohydrocortisone*) OR (TI delta1-hydrocortisone* OR AB delta1-hydrocortisone*) OR (TI deltacortef* OR AB deltacortef*) OR (TI delta-cortef* OR AB delta-cortef*) OR (TI deltacortenolo* OR AB deltacortenolo*) OR (TI deltacortil* OR AB deltacortil*) OR (TI deltacortoil* OR AB deltacortoil*) OR (TI deltacortril* OR AB deltacortril*) OR (TI delta-cortril* OR AB delta-cortril*) OR (TI delta-ef-cortelan* OR AB delta-ef-cortelan*) OR (TI delta-f* OR AB delta-f*) OR (TI deltaglycortril* OR AB deltaglycortril*) OR (TI deltahycortol* OR AB deltahycortol*) OR (TI delta-hycortol* OR AB delta-hycortol*) OR (TI deltaglycortol* OR AB deltaglycortol*) OR (TI delta-hydrocortison* OR AB delta-hydrocortison*) OR (TI deltaophticor* OR AB deltaophticor*) OR (TI delta-ophticor* OR AB delta-ophticor*) OR (TI deltasolone* OR AB deltasolone*) OR (TI deltastab*

OR AB deltastab*) OR (TI delta-stab* OR AB delta-stab*) OR (TI deltidrosol* OR AB deltidrosol*) OR (TI deltilone* OR AB deltilone*) OR (TI deltilon* OR AB deltilon*) OR (TI deltolasson* OR AB deltolasson*) OR (TI deltosona* OR AB deltosona*) OR (TI deltosone* OR AB deltosone*) OR (TI depo-predate* OR AB depo-predate*) OR (TI dermosolon* OR AB dermosolon*) OR (TI dhasolone* OR AB dhasolone*) OR (TI diadresone-f* OR AB diadresone-f*) OR (TI di-adresone-f* OR AB di-adresone-f*) OR (TI diadresonf* OR AB diadresonf*) OR (TI diadreson-f* OR AB diadreson-f*) OR (TI di-adreson-f* OR AB di-adreson-f*) OR (TI dicortol* OR AB dicortol*) OR (TI domucortone* OR AB domucortone*) OR (TI encortelon* OR AB encortelon*) OR (TI encortolon* OR AB encortolon*) OR (TI equisolon* OR AB equisolon*) OR (TI fernisolone-p* OR AB fernisolone-p*) OR (TI glistelone* OR AB glistelone*) OR (TI hefasolon* OR AB hefasolon*) OR (TI hostacortin-h* OR AB hostacortin-h*) OR (TI hydელtra* OR AB hydელtra*) OR (TI hydელtrone* OR AB hydელtrone*) OR (TI hydელta* OR AB hydელta*) OR (TI hydrocortancyl* OR AB hydrocortancyl*) OR (TI hydrocortidelt* OR AB hydrocortidelt*) OR (TI hydrodeltalone* OR AB hydrodeltalone*) OR (TI hydrodeltisone* OR AB hydrodeltisone*) OR (TI hydroretrocortin* OR AB hydroretrocortin*) OR (TI inflanefran* OR AB inflanefran*) OR (TI insolone* OR AB insolone*) OR (TI keteocort-h* OR AB keteocort-h*) OR (TI key-pred* OR AB key-pred*) OR (TI lenisolone* OR AB lenisolone*) OR (TI leocortol* OR AB leocortol*) OR (TI liquipred* OR AB liquipred*) OR (TI lygal-kopftinktur-n* OR AB lygal-kopftinktur-n*) OR (TI mediasolone* OR AB mediasolone*) OR (TI mepisolon* OR AB mepisolon*) OR (TI metacortalon* OR AB metacortalon*) OR (TI metacortandralon* OR AB metacortandralon*) OR (TI metacortelone* OR AB metacortelone*) OR (TI meticortelone* OR AB meticortelone*) OR (TI metiderm* OR AB metiderm*) OR (TI meti-derm* OR AB meti-derm*) OR (TI morlone* OR AB morlone*) OR (TI mydrapred* OR AB mydrapred*) OR (TI neo-delta* OR AB neo-delta*) OR (TI nisolon* OR AB nisolon*) OR (TI nsc9120* OR AB nsc9120*) OR (TI nsc-9120* OR AB nsc-9120*) OR (TI opredsone* OR AB opredsone*) OR (TI panafcortelone* OR AB panafcortelone*) OR (TI panafcortolone* OR AB panafcortolone*) OR (TI panafort* OR AB panafort*) OR (TI paracortol* OR AB paracortol*) OR (TI phlogex* OR AB phlogex*) OR (TI preconin* OR AB preconin*) OR (TI precor-

talon* OR AB precortalon*) OR (TI precortancyl* OR AB precortancyl*) OR (TI precortisyl* OR AB precortisyl*) OR (TI pre-cortisyl* OR AB pre-cortisyl*) OR (TI predacort-50* OR AB predacort-50*) OR (TI predaject-50* OR AB predaject-50*) OR (TI predalone-50* OR AB predalone-50*) OR (TI predartrina* OR AB predartrina*) OR (TI predartrine* OR AB predartrine*) OR (TI predate-50* OR AB predate-50*) OR (TI predeltilone* OR AB predeltilone*) OR (TI predisole* OR AB predisole*) OR (TI predisyr* OR AB predisyr*) OR (TI pred-ject-50* OR AB pred-ject-50*) OR (TI prednecort* OR AB prednecort*) OR (TI prednedome* OR AB prednedome*) OR (TI prednecort* OR AB prednecort*) OR (TI prednedome* OR AB prednedome*) OR (TI prednelan* OR AB prednelan*) OR (TI prednicoelin* OR AB prednicoelin*) OR (TI predni-coelin* OR AB predni-coelin*) OR (TI prednicort* OR AB prednicort*) OR (TI prednifor-drops* OR AB prednifor-drops*) OR (TI predni-helvacort* OR AB predni-helvacort*) OR (TI predni-h-tablinen* OR AB predni-h-tablinen*) OR (TI predniment* OR AB predniment*) OR (TI prednivet* OR AB prednivet*) OR (TI prednorsolon* OR AB prednorsolon*) OR (TI predonine* OR AB predonine*) OR (TI predorgasolona* OR AB predorgasolona*) OR (TI predorgasolone* OR AB predorgasolone*) OR (TI prelon* OR AB prelon*) OR (TI prenilone* OR AB prenilone*) OR (TI prenin* OR AB prenin*) OR (TI prenolone* OR AB prenolone*) OR (TI preventan* OR AB preventan*) OR (TI prezolon* OR AB prezolon*) OR (TI rubycort* OR AB rubycort*) OR (TI scherisolone* OR AB scherisolone*) OR (TI serilone* OR AB serilone*) OR (TI solondo* OR AB solondo*) OR (TI solone* OR AB solone*) OR (TI solupren* OR AB solupren*) OR (TI spiricort* OR AB spiricort*) OR (TI spilotane* OR AB spilotane*) OR (TI sterane* OR AB sterane*) OR (TI sterolone* OR AB sterolone*) OR (TI supercortisol* OR AB supercortisol*) OR (TI supercortizol* OR AB supercortizol*) OR (TI taracortelone* OR AB taracortelone*) OR (TI walesolone* OR AB walesolone*) OR (TI wysolone* OR AB wysolone*))

S47 ((TI paramethason* OR AB paramethason*) OR (TI alfa6* OR AB alfa6*) OR (TI alfa-6* OR AB alfa-6*) OR (TI aloxicort* OR AB aloxicort*) OR (TI cortiden* OR AB cortiden*) OR (TI metilar* OR AB metilar*) OR (TI paramesone* OR AB paramesone*) OR (TI parametazon* OR AB parametazon*) OR (TI para-methasone* OR AB para-methasone*) OR (TI paramethazone* OR AB paramethazone*) OR (TI

paramezone* OR AB paramezone*)
S46 (MH "Methylprednisolone") OR ((TI methylprednisolone* OR AB methylprednisolone*) OR (TI methylprednisolone* OR AB methylprednisolone*) OR (TI 6-methylprednisolone* OR AB 6-methylprednisolone*) OR (TI adlone-40* OR AB adlone-40*) OR (TI adlone-80* OR AB adlone-80*) OR (TI beta-methylprednisolone* OR AB beta-methylprednisolone*) OR (TI depmedalone* OR AB depmedalone*) OR (TI dep-medalone* OR AB dep-medalone*) OR (TI depoject-80* OR AB depoject-80*) OR (TI depopred* OR AB depopred*) OR (TI esametone* OR AB esametone*) OR (TI firmacort* OR AB firmacort*) OR (TI medixon* OR AB medixon*) OR (TI med-jec-40* OR AB med-jec-40*) OR (TI mednin* OR AB mednin*) OR (TI medralone-80* OR AB medralone-80*) OR (TI medrate* OR AB medrate*) OR (TI medrol* OR AB medrol*) OR (TI medrone* OR AB medrone*) OR (TI meprednisolone* OR AB meprednisolone*) OR (TI meprelon* OR AB meprelon*) OR (TI mesopren* OR AB mesopren*) OR (TI methacort* OR AB methacort*) OR (TI methylcotol* OR AB methylcotol*) OR (TI methylpred-dp* OR AB methylpred-dp*) OR (TI methylsterolone* OR AB methylsterolone*) OR (TI metidrol* OR AB metidrol*) OR (TI metipred* OR AB metipred*) OR (TI metrisone* OR AB metrisone*) OR (TI metycortin* OR AB metycortin*) OR (TI metypred* OR AB metypred*) OR (TI metypresol* OR AB metypresol*) OR (TI neomedrone* OR AB neomedrone*) OR (TI nsc19987* OR AB nsc19987*) OR (TI nsc-19987* OR AB nsc-19987*) OR (TI prednol* OR AB prednol*) OR (TI solomet* OR AB solomet*) OR (TI solu-decortin* OR AB solu-decortin*) OR (TI urbason* OR AB urbason*) OR (TI x4w7zr7023* OR AB x4w7zr7023*)))
S45 ((MH "Dexamethasone") OR ((TI dexameth* OR AB dexameth*) OR (TI adrecort* OR AB adrecort*) OR (TI adrenocot* OR AB adrenocot*) OR (TI aroseb-dex* OR AB aroseb-dex*) OR (TI aflucoson* OR AB aflucoson*) OR (TI alfalyl* OR AB alfalyl*) OR (TI anaflogistico* OR AB anaflogistico*) OR (TI aphtasolon* OR AB aphtasolon*) OR (TI arcodexan* OR AB arcodexan*) OR (TI arcodexane* OR AB arcodexane*) OR (TI artrosone* OR AB artrosone*) OR (TI auxiron* OR AB auxiron*) OR (TI azium* OR AB azium*) OR (TI bidexol* OR AB bidexol*) OR (TI calonat* OR AB calonat*) OR (TI cebedex* OR AB cebedex*) OR (TI cetadexon* OR AB cetadexon*) OR (TI colofeam* OR AB colofeam*) OR (TI corsona* OR AB corsona*) OR (TI corsone* OR AB corsone*)

OR (TI cortastat* OR AB cortastat*) OR (TI cortidex* OR AB cortidex*) OR (TI cortidrona* OR AB cortidrona*) OR (TI cortidrone* OR AB cortidrone*) OR (TI cortisumman* OR AB cortisumman*) OR (TI dehydro-hydrocortison* OR AB dehydro-hydrocortison*) OR (TI delcortol* OR AB delcortol*) OR (TI delta1-dehydrocortisol* OR AB delta1-dehydrocortisol*) OR (TI delta1-dehydrohydrocortisone* OR AB delta1-dehydrohydrocortisone*) OR (TI delta1-hydrocortisone* OR AB delta1-hydrocortisone*) OR (TI deltacortef* OR AB deltacortef*) OR (TI deltacortef* OR AB delta-cortef*) OR (TI deltacortenolo* OR AB deltacortenolo*) OR (TI deltacortil* OR AB deltacortil*) OR (TI deltacortoil* OR AB deltacortoil*) OR (TI deltacortril* OR AB deltacortril*) OR (TI delta-cortril* OR AB delta-cortril*) OR (TI delta-efcortelan* OR AB delta-efcortelan*) OR (TI delta-f* OR AB delta-f*) OR (TI deltaglycortril* OR AB deltaglycortril*) OR (TI deltahycortol* OR AB deltahycortol*) OR (TI delta-hycortol* OR AB delta-hycortol*) OR (TI deltahydrocortison* OR AB deltahydrocortison*) OR (TI delta-hydrocortison* OR AB delta-hydrocortison*) OR (TI deltaophticor* OR AB deltaophticor*) OR (TI delta-ophticor* OR AB delta-ophticor*) OR (TI dacortin*-fuerte* OR AB dacortin*-fuerte*) OR (TI dalalone* OR AB dalalone*) OR (TI danasone* OR AB danasone*) OR (TI decacortin* OR AB decacortin*) OR (TI decadeltona* OR AB decadeltona*) OR (TI decadeltona* OR AB decadeltona*) OR (TI decaderm* OR AB decaderm*) OR (TI decadion* OR AB decadion*) OR (TI decadran* OR AB decadran*) OR (TI decadron* OR AB decadron*) OR (TI decadronal* OR AB decadronal*) OR (TI decadrone* OR AB decadrone*) OR (TI decaesadril* OR AB decaesadril*) OR (TI decagel* OR AB decagel*) OR (TI decaject* OR AB decaject*) OR (TI decalix* OR AB decalix*) OR (TI decameth* OR AB decameth*) OR (TI decamethasone* OR AB decamethasone*) OR (TI decasone* OR AB decasone*) OR (TI decaspray* OR AB decaspray*) OR (TI decasterolone* OR AB decasterolone*) OR (TI decdan* OR AB decdan*) OR (TI decilone* OR AB decilone*) OR (TI decofluor* OR AB decofluor*) OR (TI dectancyl* OR AB dectancyl*) OR (TI dekcort* OR AB dekcort*) OR (TI delladec* OR AB delladec*) OR (TI deltafluoren* OR AB deltafluoren*) OR (TI deltafluorene* OR AB deltafluorene*) OR (TI dergramin* OR AB dergramin*) OR (TI deronil* OR AB deronil*) OR (TI desacort* OR AB desacort*) OR (TI desadrene* OR AB desadrene*) OR (TI

desalark* OR AB desalark*) OR (TI desameton* OR AB desameton*) OR (TI desametone* OR AB desametone*) OR (TI desigdron* OR AB desigdron*) OR (TI dexacen* OR AB dexacen*) OR (TI dexachel* OR AB dexachel*) OR (TI dexacort* OR AB dexacort*) OR (TI dexacortal* OR AB dexacortal*) OR (TI dexacorten* OR AB dexacorten*) OR (TI dexacortin* OR AB dexacortin*) OR (TI dexacortisyl* OR AB dexacortisyl*) OR (TI dexa-cortisyl* OR AB dexa-cortisyl*) OR (TI dexa-dabrosan* OR AB dexa-dabrosan*) OR (TI dexadabrosan* OR AB dexadabrosan*) OR (TI dexadecadrol* OR AB dexadecadrol*) OR (TI dexadrol* OR AB dexadrol*) OR (TI dexagel* OR AB dexagel*) OR (TI dexagen* OR AB dexagen*) OR (TI dexahelvacort* OR AB dexahelvacort*) OR (TI dexakorti* OR AB dexakorti*) OR (TI dexa-korti* OR AB dexa-korti*) OR (TI dexalien* OR AB dexalien*) OR (TI dexalocal* OR AB dexalocal*) OR (TI dexame* OR AB dexame*) OR (TI dexamecortin* OR AB dexamecortin*) OR (TI dexameson* OR AB dexameson*) OR (TI dexamesone* OR AB dexamesone*) OR (TI dexametason* OR AB dexametason*) OR (TI dexametason* OR AB dexametason*) OR (TI dexamonozon* OR AB dexamonozon*) OR (TI dexan* OR AB dexan*) OR (TI dexapot* OR AB dexapot*) OR (TI dexascherosan* OR AB dexascherosan*) OR (TI dexa-scherosan* OR AB dexa-scherosan*) OR (TI dexascheroson* OR AB dexascheroson*) OR (TI dexa-scheroson* OR AB dexa-scheroson*) OR (TI dexascherozon* OR AB dexascherozon*) OR (TI dexa-scherozon* OR AB dexa-scherozon*) OR (TI dexason* OR AB dexason*) OR (TI dexinoral* OR AB dexinoral*) OR (TI dexionil* OR AB dexionil*) OR (TI dexmethsone* OR AB dexmethsone*) OR (TI dexona* OR AB dexona*) OR (TI dexone* OR AB dexone*) OR (TI dexpak* OR AB dexpak*) OR (TI dextelan* OR AB dextelan*) OR (TI dextenza* OR AB dextenza*) OR (TI dextrason* OR AB dextrason*) OR (TI dexycu* OR AB dexycu*) OR (TI dezone* OR AB dezone*) OR (TI dibasona* OR AB dibasona*) OR (TI doxamethasone* OR AB doxamethasone*) OR (TI esacortene* OR AB esacortene*) OR (TI exadion* OR AB exadion*) OR (TI exadione* OR AB exadione*) OR (TI firmalone* OR AB firmalone*) OR (TI fluormethyl-prednisolone* OR AB fluormethyl-prednisolone*) OR (TI fluormethylprednisolon* OR AB fluormethylprednisolon*) OR (TI fluormethyl-prednisolone* OR AB fluormethyl-prednisolone*) OR (TI fluormone* OR AB fluormone*) OR (TI fluorocort* OR AB fluorocort*) OR (TI fluorodelta* OR

AB fluorodelta*) OR (TI fluoromethylprednisolone* OR AB fluoromethylprednisolone*) OR (TI fortecortin* OR AB fortecortin*) OR (TI gammacorten* OR AB gammacorten*) OR (TI gammacortene* OR AB gammacortene*) OR (TI grosodexon* OR AB grosodexon*) OR (TI grosodexone* OR AB grosodexone*) OR (TI hemady* OR AB hemady*) OR (TI hexadecadiol* OR AB hexadecadiol*) OR (TI hexadecadrol* OR AB hexadecadrol*) OR (TI hexadiol* OR AB hexadiol*) OR (TI hexadrol* OR AB hexadrol*) OR (TI isnacort* OR AB isnacort*) OR (TI isoptodex* OR AB isoptodex*) OR (TI isopto-dex* OR AB isopto-dex*) OR (TI isoptomaxidex* OR AB isoptomaxidex*) OR (TI lokalison* OR AB lokalison*) OR (TI loverine* OR AB loverine*) OR (TI luxazone* OR AB luxazone*) OR (TI marvidione* OR AB marvidione*) OR (TI maxidex* OR AB maxidex*) OR (TI mediamethasone* OR AB mediamethasone*) OR (TI megacortin* OR AB megacortin*) OR (TI mephameson* OR AB mephameson*) OR (TI mephamesone* OR AB mephamesone*) OR (TI metasolon* OR AB metasolon*) OR (TI metasolone* OR AB metasolone*) OR (TI methazonion* OR AB methazonion*) OR (TI methazonione* OR AB methazonione*) OR (TI methylfluorprednisolone* OR AB methylfluorprednisolone*) OR (TI mexasone* OR AB mexasone*) OR (TI millicorten* OR AB millicorten*) OR (TI millicortenol* OR AB millicortenol*) OR (TI mk125* OR AB mk125*) OR (TI mk-125* OR AB mk-125*) OR (TI mymethasone* OR AB mymethasone*) OR (TI neoforderx* OR AB neoforderx*) OR (TI neofordex* OR AB neofordex*) OR (TI nisomethasona* OR AB nisomethasona*) OR (TI novocort* OR AB novocort*) OR (TI nsc34521* OR AB nsc34521*) OR (TI nsc-34521* OR AB nsc-34521*) OR (TI optiocorten* OR AB optiocorten*) OR (TI optiocortinol* OR AB optiocortinol*) OR (TI oradexan* OR AB oradexan*) OR (TI oradexon* OR AB oradexon*) OR (TI oradexone* OR AB oradexone*) OR (TI orgadrone* OR AB orgadrone*) OR (TI ozurdex* OR AB ozurdex*) OR (TI pidexon* OR AB pidexon*) OR (TI policort* OR AB policort*) OR (TI posurdex* OR AB posurdex*) OR (TI predni-f* OR AB predni-f*) OR (TI prodexona* OR AB prodexona*) OR (TI prodexone* OR AB prodexone*) OR (TI sanamethasone* OR AB sanamethasone*) OR (TI santenson* OR AB santenson*) OR (TI santeson* OR AB santeson*) OR (TI sawasone* OR AB sawasone*) OR (TI solurex* OR AB solurex*) OR (TI spoloven* OR AB spoloven*) OR (TI sterasone* OR AB sterasone*) OR (TI thilodexine* OR AB

thilodexine*) OR (TI triamcimetil* OR AB triamcimetil*) OR (TI vexamet* OR AB vexamet*) OR (TI visumetazone* OR AB visumetazone*) OR (TI visumethazone* OR AB visumethazone*))

S44 ((TI desoxi* OR AB desoxi*) OR (TI 17#desoxymethasone* OR AB 17#desoxymethasone*) OR (TI 17-desoxymethasone* OR AB 17-desoxymethasone*) OR (TI "A 41304*" OR AB "A 41304*") OR (TI a-41304* OR AB a-41304*) OR (TI cendexsone* OR AB cendexsone*) OR (TI deoxon* OR AB deoxon*) OR (TI deoxymethasone* OR AB deoxymethasone*) OR (TI deoxymethazone* OR AB deoxymethazone*) OR (TI dercason* OR AB dercason*) OR (TI desicort* OR AB desicort*) OR (TI desoxydexamethasone* OR AB desoxydexamethasone*) OR (TI desoxymetasone* OR AB desoxymetasone*) OR (TI desoxymethasone* OR AB desoxymethasone*) OR (TI dethasone* OR AB dethasone*) OR (TI dexocort* OR AB dexocort*) OR (TI esperson* OR AB esperson*) OR (TI flubason* OR AB flubason*) OR (TI hoe304* OR AB hoe304*) OR (TI hoe-304* OR AB hoe-304*) OR (TI ibaril* OR AB ibaril*) OR (TI inerson* OR AB inerson*) OR (TI "r#17#desoxy dexamethasone*" OR AB "r#17#desoxy dexamethasone*") OR (TI r#17#desoxy-dexamethasone* OR AB r#17#desoxy-dexamethasone*) OR (TI r2113* OR AB r2113*) OR (TI r-2113* OR AB r-2113*) OR (TI stiedex* OR AB stiedex*) OR (TI topcort* OR AB topcort*) OR (TI topicort* OR AB topicort*) OR (TI topiderm* OR AB topiderm*) OR (TI topisolon* OR AB topisolon*))

S43 (MH "Betamethasone") OR ((TI betamethason* OR AB betamethason*) OR (TI becasone* OR AB becasone*) OR (TI beprogel* OR AB beprogel*) OR (TI betacortril* OR AB betacortril*) OR (TI betadexamethasone* OR AB betadexamethasone*) OR (TI betamethasolone* OR AB betamethasolone*) OR (TI beta-methason* OR AB beta-methason*) OR (TI beta-phos#ac* OR AB beta-phos#ac*) OR (TI betason* OR AB betason*) OR (TI betnasol* OR AB betnasol*) OR (TI betnelan* OR AB betnelan*) OR (TI betnovate* OR AB betnovate*) OR (TI betsolan* OR AB betsolan*) OR (TI betsolan* OR AB betsolan*) OR (TI betsopart* OR AB betsopart*) OR (TI celestan* OR AB celestan*) OR (TI celestene* OR AB celestene*) OR (TI celeston* OR AB celeston*) OR (TI cellestoderm* OR AB cellestoderm*) OR (TI cidoten* OR AB cidoten*) OR (TI dermobet* OR AB dermobet*) OR (TI diprolen* OR AB diprolen*) OR (TI flubenisolone* OR AB flubenisolone*) OR (TI methasone* OR AB methasone*) OR (TI nsc39470*

OR AB nsc39470*) OR (TI nsc-39470* OR AB nsc-39470*) OR (TI ophtamesone* OR AB ophtamesone*) OR (TI prednisolone* OR AB prednisolone*))

S42 TI glucocortico* OR AB glucocortico*

S41 (MH "Glucocorticoids")

S40 S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39

S39 ((TI diagnos* OR AB diagnos*) N3 (TI block* OR AB block*))

S38 ((TI cervical OR AB cervical) N3 ((TI block* OR AB block*) OR (TI anesthes* OR AB anesthes*) OR (TI anaesthes* OR AB anaesthes*)))

S37 (TI autonomic-block* OR AB autonomic-block*)

S36 (TI chemical-neurolys* OR AB chemical-neurolys*)

S35 ((TI chemodenervat* OR AB chemodenervat*) OR (TI chemo-denervat* OR AB chemo-denervat*))

S34 ((TI nerve OR AB nerve) N3 (TI block* OR AB block*))

S33 (MH "Nerve Block") OR (MH "Cervical Plexus Block")

S32 (((TI intraarticular* OR AB intraarticular*) OR (TI intraarticular* OR AB intraarticular*) OR (TI intraspinal* OR AB intra-spinal*) OR (TI intraspinal* OR AB intraspinal*) OR (TI epidural* OR AB epidural*) OR (TI epi-dural* OR AB epi-dural*) OR (TI extradural* OR AB extradural*) OR (TI extra-dural* OR AB extra-dural*) OR (TI peridural* OR AB peridural*) OR (TI peri-dural* OR AB peri-dural*) OR (TI intrathecal* OR AB intrathecal*) OR (TI intrathecal* OR AB intrathecal*)) N3 ((TI admin* OR AB admin*) OR (TI block* OR AB block*) OR (TI deliver* OR AB deliver*) OR (TI infus* OR AB infus*) OR (TI inject* OR AB inject*) OR (TI medicat* OR AB medicat*) OR (TI treat* OR AB treat*)))

S31 ((TI joint OR AB joint) N3 ((TI inject* OR AB inject*) OR (TI infus* OR AB infus*)))

S30 (MH "Injections, Intraarticular")

S29 (MH "Injections, Epidural")

S28 (MH "Injections, Intraspinal")

S27 (MH "Injections")

S26 S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25

S25 ((TI facet OR AB facet) N3 (TI vertebra* OR AB vertebra*))

S24 ((TI zygapophyseal OR AB zygapophyseal) OR (TI zygapophysial OR AB zygapophysial))

S23 (TI "facet joint*" OR AB "facet joint*")

S22 (MH "Zygapophyseal Joint")

S21 (((TI C1 OR AB C1) OR (TI C2 OR AB C2) OR (TI C3 OR AB C3) OR (TI C4 OR AB C4)) N3 (TI vertebra* OR AB vertebra*))

soid* OR codelcortone* OR co-hydeltra* OR compresolone* OR cortadeltona* OR cortadeltone* OR cortalone* OR cortelinter* OR cortisolone* OR cotolone* OR dacortin* OR dacrotin* OR decaprednil* OR decortril* OR dehydrocortex* OR dehydro-cortex* OR dehydrocortisol* OR dehydrohydrocortison* OR dehydro-hydrocortison* OR delcortol* OR delta1-dehydrocortisol* OR delta1-dehydrohydrocortison* OR delta1-hydrocortison* OR deltacortef* OR delta-cortef* OR deltacortenolo* OR deltacortil* OR deltacortoil* OR deltacortril* OR delta-cortril* OR delta-ef-cortelan* OR delta-f* OR deltaglycortril* OR deltahycortol* OR delta-hycortol* OR deltahydrocortison* OR delta-hydrocortison* OR deltaopthico* OR delta-opthico* OR deltasolone* OR deltastab* OR delta-stab* OR deltidrosol* OR deltilone* OR deltilon* OR deltolasson* OR deltosona* OR deltosone* OR depo-predate* OR dermosolon* OR dhasolone* OR diadresone-f* OR di-adresone-f* OR diadresonf* OR diadreson-f* OR di-adreson-f* OR dicortol* OR domucortone* OR encortelon* OR encortolon* OR equisolon* OR fernisolone-p* OR glistelone* OR hefasolon* OR hostacortin-h* OR hydeltra* OR hydeltone* OR hydrelta* OR hydrocortancyl* OR hydrocortidelt* OR hydrodeltalone* OR hydrodeltison* OR hydroretrocortin* OR inflanefran* OR insolone* OR ke-teocort-h* OR key-pred* OR lenisolone* OR leocortol* OR liquipred* OR lygal-kopftinktur-n* OR mediasolone* OR meprisolon* OR metacortalon* OR metacortandralon* OR metacortelone* OR meticortelone* OR metiderm* OR meti-derm* OR morlone* OR mydraped* OR neo-delta* OR nisolon* OR nsc9120* OR nsc-9120* OR opredson* OR panafcortelone* OR panafcortolone* OR panafort* OR paracortol* OR phlogex* OR precocin* OR precortalon* OR precortancyl* OR precortisyl* OR pre-cortisyl* OR predacort-50* OR predaject-50* OR predalone-50* OR predartrina* OR predartrine* OR predate-50* OR predeltilone* OR predisole* OR predisy* OR pred-ject-50* OR prednecort* OR prednedome* OR predne-dome* OR prednelan* OR prednicoelin* OR predni-coelin* OR prednicort* OR prednifor-drops* OR predni-helvacort* OR predni-h-tablinen* OR predniment* OR predniretard* OR prednivet* OR prednor-solon* OR predonine* OR predorgasolona* OR predorgasolone* OR prelon* OR prenilone* OR prenin* OR prenilone* OR preventan* OR prezolon* OR rubycort* OR scherisolon* OR serilone* OR solondo* OR solone* OR solupren* OR spiricort* OR spilotane* OR sterane* OR sterolone* OR supercortisol* OR supercortizol* OR taracortelone* OR walesolone* OR wysolone*)) OR (TITLE-ABS-KEY (prednison* OR ancortone* OR apo-

prednisone* OR biocortone* OR colison* OR cortan* OR cortidelt* OR cortiprex* OR cutason* OR dacorten* OR dacortin* OR decortancyl* OR decortin* OR decortisyl* OR de-cortisyl* OR dehydrocortison* OR dekortin* OR delitison* OR delta-1-dehydrocortison* OR deltacortelan* OR deltacorten* OR deltacortison* OR deltacortison* OR deltacortone* OR delta-dome* OR delta-prenovis* OR deltison* OR deltra* OR diadreson* OR di-adreson* OR drazone* OR encorton* OR enkortolon* OR enkorton* OR fernison* OR hostacortin* OR inson* OR kortancyl* OR liquid-pred* OR lodotra* OR me-korti* OR meprison* OR metacortandracin* OR meticorten* OR meticortine* OR nisona* OR nsc10023* OR nsc-10023* OR orasone* OR orisane* OR panafcort* OR panasol* OR paracort* OR pehacort* OR precort* OR prednicen-m* OR prednicorm* OR prednicot* OR prednidib* OR predniment* OR predni-tablinen* OR prednitone* OR pronison* OR pronizone* OR pulmison* OR rayos* OR rectodelt* OR servison* OR steerometz* OR sterapred* OR ultracorten* OR urtilone* OR vb0r961hzt* OR winpred*)) OR (TITLE-ABS-KEY (triamcinolon* OR 1zk20vi6ty* OR acetocot* OR adcortyl* OR aristocort* AND aristodan* OR azmacor* OR celeste* OR cl19823* OR cl-19823* OR clinacort* OR clinalog* OR delphicort* OR fluoxiprednisolone* OR fluoxyprednisolone* OR kenacort* OR ken-jec-40* OR korticoid* OR ledercort* OR omcilon* OR polcortolon* OR rp8357* OR rp-8357* OR simacort* OR sterocort* OR tac-3* OR triamcinolone* OR triacortyl* OR triam-a* OR triamcort* OR triamcot* OR triam-forte* OR triamonide-40* OR triam-sicort* OR triancinolon* OR u-tri-lone* OR volon*)) OR (TITLE-ABS-KEY (triam* OR aftab* OR aftach* OR ah-bina* OR albicort* OR allegra-nasal* OR aquatain* OR aristocort-a* OR aristoderm* OR aristogel* OR azmacort* OR centocort* OR cinolar* OR cinonide* OR den-kacort-forte* OR f446c597ka* OR facort* OR flutex* OR flutone* OR fougera* OR ftorocort* OR gemicort* OR generlog* OR invert-plaster* OR kemzid* OR kenac* OR kenalog* OR kena-log* OR kenalone* OR kenlog* OR ledercort-a* OR ledercort-d* OR manolone* OR metoral* OR nasacort* OR nasocor-aq* OR nincort* OR oracort* OR oralog* OR oralone* OR oramedy* OR or-repaste* OR panalog* OR pokkortolon* OR shincort* OR solodelf* OR steronase-aq* OR tibicorten* OR tibio-corten* OR tramacin* OR triacet* OR triacort* OR tria-derm* OR tri-anemul* OR trianide* OR triatex* OR tri-cort* OR triderm* OR tridez* OR triesence* OR trigon* OR trikort* OR trinolone* OR trivaris* OR trydex* OR vetalog* OR vistrec* OR yn102* OR yn-102* OR zilretta*)) OR (TITLE-ABS-KEY (cortison* OR 883wkn7w8x* OR

adrenalex* OR adreson* OR corlin* OR cortadren* OR cortagen* OR cortandren* OR cortane* OR cortisal* OR cortisate* OR cortistal* OR cortivite* OR cortogen* OR cortone* OR incorlin* OR incortin* OR kendall-compound-e* OR nsc9703* OR nsc-9703* OR ricortex* OR scheroson* OR v27w9254fz* OR wintersteiner-compound-f*)) OR (TITLE-ABS-KEY (fludrocortisone* OR 9alpha-fludrocortisone* OR 9-alpha-fludrohydrocortisone* OR 9-alpha-fluoro-17-hydroxycorticosterone* OR 9alpha-fluorocortisal* OR 9alpha-fluorocortisol* OR 9-alpha-fluorocortisol* OR 9alpha-fluorohydrocortisone* OR 9alpha-fluorohydro-cortisone* OR 9-alpha-fluorohydrocortisone* OR 9-fluoro-17-hydroxycortisone* OR 9-fluorocortisol* OR 9-fluorohydrocortisone* OR alflorone* OR alpha-fluorohydrocortisone* OR astonin* OR fcol* OR f-cortef* OR florinef* OR fludrocortisol* OR fludrocortone* OR fludrohydrocortisone* OR fludrone* OR fluohydrisone* OR fluohydrocortisone* OR fluorhydrocortisonum* OR fluorinef* OR fluorocortisone* OR fluorohydrocortisone* OR flurinef* OR fluorohydrocortisone* OR u0476m545b*)))) AND NOT (TITLE ("case report"))

Web of Science (Clarivate)

Searched April 22, 2021.

221 records retrieved.

Databases: Web of Science Core Collection: Science Citation Index Expanded (1945-present), Social Sciences Citation Index (1956-present), Arts & Humanities Citation Index (1975-present), Conference Proceedings Citation Index- Science (1990-present), Conference Proceedings Citation Index- Social Science & Humanities (1990-present), Emerging Sources Citation Index (2015-present), KCI-Korean Journal Database (1980-present); Russian Science Citation Index (2015-present); SciELO Citation Index (2002-present).

Timespan=1945-2021

Language = Auto

42 #40 NOT #41 221

41 TI=("case report*" OR "case study") or DT=(case report) 1,839,444

40 #1 AND (#6 OR #13) AND (#26 OR #39) 272

39 #38 OR #37 OR #36 OR #35 OR #34 OR #33 OR #32 OR #31 OR #30 OR #29 OR #28 OR #27 514,878

38 TS= (fludrocortisone* OR 9alpha-fludrocortisone* OR 9-alpha-fludrohydrocortisone* OR 9-alpha-fluoro-17-hydroxycorticosterone* OR 9alpha-fluorocortisal* OR 9alpha-fluorocortisol* OR 9-alpha-fluorocortisol* OR 9alpha-fluorohydrocortisone* OR 9alpha-fluorohydro-cortisone* OR 9-alpha-fluorohydrocortisone* OR 9-fluoro-17-hydroxycortisone* OR 9-fluorocortisol* OR 9-fluorohydrocortisone* OR alflorone* OR alpha-fluorohydrocortisone* OR astonin* OR fcol* OR f-cortef* OR florinef* OR fludrocortisol* OR fludrocortone* OR fludrohydrocortisone* OR fludrone* OR fluohydrisone* OR fluohydrocortisone* OR fluorhydrocortisonum* OR fluorinef* OR fluorocortisone* OR fluorohydrocortisone* OR flurinef* OR fluorohydrocortisone* OR u0476m545b*)))

hydrocortisone* OR 9-fluoro-17-hydroxycortisone* OR 9-fluorocortisol* OR 9-fluorohydrocortisone* OR alflorone* OR alpha-fluorohydrocortisone* OR astonin* OR fcol* OR f-cortef* OR florinef* OR fludrocortisol* OR fludrocortone* OR fludrohydrocortisone* OR fludrone* OR fluohydrisone* OR fluohydrocortisone* OR fluorhydrocortisonum* OR fluorinef* OR fluorocortisone* OR fluorohydrocortisone* OR flurinef* OR fluorohydrocortisone* OR u0476m545b*) 2,674

37 TS= (cortison* OR 883wkn7w8x* OR adrenalex* OR adreson* OR corlin* OR cortadren* OR cortagen* OR cortandren* OR cortane* OR cortisal* OR cortisate* OR cortistal* OR cortivite* OR cortogen* OR cortone* OR incorlin* OR incortin* OR kendall-compound-e* OR nsc9703* OR nsc-9703* OR ricortex* OR scheroson* OR v27w9254fz* OR wintersteiner-compound-f*) 21,456

36 TS= (triam* OR aftab* OR aftach* OR ahbina* OR albicort* OR allegra-nasal* OR aquatain* OR aristocort-a* OR aristoderm* OR aristogel* OR azmacort* OR centocort* OR cinolar* OR cinonide* OR denkacort-forte* OR f446c597ka* OR facort* OR flutex* OR flutone* OR fougera* OR ftorocort* OR gemicort* OR generlog* OR invert-plaster* OR kemzid* OR kenac* OR kenalog* OR kena-log* OR kenalone* OR kenlog* OR ledercort-a* OR ledercort-d* OR manolone* OR metoral* OR nasacort* OR nasocor-aq* OR nincort* OR oracort* OR oralog* OR oralone* OR oramedy* OR orrepaste* OR panalog* OR pokkortolon* OR shincort* OR solodelf* OR steronase-aq* OR tibicorten* OR tibiocorten* OR tramacin* OR triacet* OR triacort* OR triaderm* OR tri-anemul* OR trianide* OR triatex* OR tricort* OR triderm* OR tridez* OR triesence* OR trigon* OR trikort* OR trinolone* OR trivaris* OR trymex* OR vetalog* OR vistrec* OR yn102* OR yn-102* OR zilretta*) 97,662

35 TS= (triamcinolon* OR 1zk20vi6ty* OR acetocot* OR adcortyl* OR "aristocort* aristodan*" OR azmacor* OR celeste* OR cl19823* OR cl-19823* OR clinacort* OR clinalog* OR delphicort* OR fluoxiprednisolone* OR fluoxyprednisolone* OR kenacort* OR ken-jec-40* OR korticoid* OR ledercort* OR omcilon* OR polcortolon* OR rp8357* OR rp-8357* OR simacort* OR sterocort* OR tac-3* OR tramcinolone* OR triacortyl* OR triam-a* OR triamcort* OR triamcot* OR triam-forte* OR triamonide-40* OR triamsicort* OR triancinolon* OR u-tri-lone* OR volon*) 18,261

"aeroseb dex*" OR aeroseb-d* OR aflucoson* OR alfalyl* OR anaflogistico* OR aphtasolon* OR arcodexan* OR arcodexane* OR artrosone* OR auxiron* OR azium* OR bidexol* OR bisu-ds* OR calonat* OR cebedex* OR cetadexon* OR colofoam* OR corsona* OR corsone* OR cortastat* OR cortidex* OR cortidrona* OR cortidrone* OR cortisumman* OR dacortina-fuerte* OR dacortina-fuerte* OR dacortine-fuerte* OR dacortine-fuerte* OR dalalone* OR danasone* OR decacortin* OR decadeltosona* OR decadeltosone* OR decaderm* OR decadion* OR decadran* OR decadron* OR decadronal* OR decadrone* OR decaesadril* OR decagel* OR decaject* OR decalix* OR decameth* OR decamethasone* OR decasone* OR decaspray* OR decasterolone* OR decdan* OR decilone* OR decofluor* OR dectancyl* OR dekakort* OR deladec* OR deltafluoren* OR deltafluorene* OR dergramin* OR deronil* OR desacort* OR desadrene* OR desalark* OR desameton* OR desametone* OR desigdron* OR de-sone* OR dexa-cortisyl* OR dexa-dabrosan* OR dexa-korti* OR dexa-scherozon* OR dexacen* OR dexachel* OR dexacort* OR dexacortal* OR dexacorten* OR dexacortin* OR dexacortisyl* OR dexa-cortisyl* OR dexa-dabrosan* OR dexadabrosan* OR dexadecadrol* OR dexadrol* OR dexagel* OR dexagen* OR dexahelvacort* OR dexakorti* OR dexa-korti* OR dexalien* OR dexalocal* OR dexame* OR dexamecortin* OR dexameson* OR dexamesone* OR dexametason* OR dexametasone* OR dexamonozon* OR dexan* OR dexapot* OR dexascherosan* OR dexa-scherosan* OR dexascherosan* OR dexa-scherosan* OR dexascherozon* OR dexa-scherozon* OR dexason* OR dexinoral* OR dexionil* OR dexmethsone* OR dexona* OR dexone* OR dexpak* OR dextelan* OR dextenza* OR dextrasone* OR dexycu* OR dezone* OR dibasona* OR doxamethasone* OR esacortene* OR exadion* OR exadione* OR firmalone* OR "fluormethyl prednisolone*" OR fluormethylprednisolon* OR fluormethyl-prednisolone* OR fluormone* OR fluorocort* OR fluorodelta* OR fluoromethylprednisolone* OR fortecortin* OR gammacorten* OR gammacortene* OR grosodexon* OR grosodexone* OR hemady* OR hexadecadiol* OR hexadecadrol* OR hexadiol* OR hexadrol* OR isnacort* OR isoptodex* OR isopto-dex* OR isoptomaxidex* OR isopto-maxidex* OR lokalison* OR loverine* OR luxazone* OR marvidione* OR maxidex* OR mediamethasone* OR megacortin* OR mephameson* OR

mephamesone* OR metasolon* OR metasolone* OR methazonion* OR methazonione* OR methylfluorprednisolone* OR mexasone* OR millicorten* OR millicortenol* OR mk125* OR mk-125* OR mymethasone* OR neoforderx* OR neofordex* OR nisomethasone* OR novocort* OR nsc34521* OR nsc-34521* OR oftan-dexa* OR optiocorten* OR optiocortinol* OR oradexan* OR oradexon* OR oradexone* OR orgadron* OR ozurdex* OR pidexon* OR policort* OR posurdex* OR predni-f* OR prednisolone-f* OR prodexona* OR prodexone* OR sanamethasone* OR santenson* OR santeson* OR sawasone* OR solurex* OR spoloven* OR sterasone* OR thilodexine* OR triamcimetil* OR vexamet* OR visumetazone* OR visumethazone*) 112,154

29 TS=(desoxi* OR 17*desoxymethasone* OR 17-desoxymethasone* OR "A 41304*" OR a-41304* OR cendexsone* OR deoxon* OR deoxymethasone* OR deoxymethazone* OR dercason* OR desicort* OR desoxydexamethasone* OR desoxymetasone* OR desoxymethasone* OR dethasone* OR dexocort* OR esperson* OR flubason* OR hoe304* OR hoe-304* OR ibaril* OR inerson* OR "r*17*desoxy dexamethasone*" OR r*17*desoxy-dexamethasone* OR r2113* OR r-2113* OR stiedex* OR topcort* OR topicort* OR topiderm* OR topisolon*) 560

28 TS=(betamethason* OR becasone* OR beprogel* OR betacortril* OR betadexamethasone* OR betamethasolone* OR beta-methason* OR betaphos*ac* OR betason* OR betnasol* OR betnelan* OR betnovate* OR betsolan* OR betsolon* OR bet-sopart* OR celestan* OR celestene* OR celeston* OR cellestoderm* OR cidoten* OR dermobet* OR diprolen* OR flubenisolone* OR methasone* OR nsc39470* OR nsc-39470* OR ophtamesone* OR prednisolone*) 60,405

27 TS=glucocorticoid* 152,665

26 #25 OR #24 OR #23 OR #22 OR #21 OR #20 OR #19 OR #18 78,618

25 TS=(diagnos* NEAR/3 block*) 2,703

24 TS=(cervical NEAR/3 (block* OR anesthes* OR anaesthes*)) 1,880

23 TS=autonomic-block* 1,326

22 TS=chemical-neurolys* 83

21 TS=(chemodenervat* OR chemo-denervat*) 571

20 TS=(nerve NEAR/3 block*) 29,645

19 TS=((intraarticular* OR intraarticular* OR intraspinal* OR intraspinal* OR epidural* OR epidural*)

OR extradural* OR extra-dural* OR peridural* OR peri-dural* OR intrathecal* OR intrathecal*) NEAR/3 (admin* OR block* OR deliver* OR infus* OR inject* OR medicat* OR treat*)) 44,408

18 TS=(joint NEAR/3 (inject* OR infus*)) 3,787

17 #16 OR #15 OR #14 OR #13 OR #12 OR #11 OR #10 OR #9 OR #8 OR #7 49,732

16 TS=(facet NEAR/3 vertebra*) 328

15 TS="facet joint*" 4,817

14 TS=(zygapophyseal OR zygapophysial) 2,549

13 TS=((C1 OR C2 OR C3 OR C4) NEAR/3 vertebra*) 1,903

12 TS=epistroph* 118

11 TS=(axis NEAR/3 (cervical OR vertebra*)) 2,731

10 TS=(cervical NEAR/3 (axis OR vertebra*)) 34,108

9 TS=("cervical plexus*" OR "plexus cervicalis") 1,228

8 TS=(articulatio-atlantooccipitalis OR atlantooccipital OR atlanto-occipital OR atloidooccipital OR atloido-occipital OR cervicooccipital OR cervico-occipital OR craniocervical OR cranio-cervical OR craniovertebral OR cranio-vertebral OR Cruveilhier OR occipitoatlantal OR occipito-atlantal OR occipitoatlas OR occipito-atlas OR occipitocervical OR occipito-cervical) 7,934

7 TS=(atlantoaxial OR atlanto-axial OR atlantodental OR atlanto-dental) 5,430

6 #5 OR #4 OR #3 OR #2 17,082

5 TS=(cervicogenic* OR cervico-genic*) 1,186

4 TS=((cervical* OR cranio-cervical* OR craniocervical* OR posttraumatic OR post-traumatic) NEAR/3 (headache* OR head-ache* OR cephalalgi*)) 1,518

3 TS=(whiplash* OR whip-lash* OR neck-hyperextension*) 4,984

2 TS=(neck NEAR/3 (injur* OR lesion* OR traum*)) 10,707

1 TS=(headache* OR head-ache* OR cephalalgi* OR cephalgi* OR cephalaea* OR cephalodyn*) 115,440

Appendix 2. *Included studies.*

Lee DG, Cho YW, Jang SH, Son SM, Kim GJ, Ahn SH. Effectiveness of intra-articular steroid injection for atlanto-occipital joint pain. *Pain Med* 2015; 16:1077-1082.

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Exclusion Reason: Review or Case Study

Antonaci F, Bono G, Chimento P. Diagnosing cervicogenic headache. *Journal of Headache and Pain* 2006; 7:145-148.

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Becker WJ. Cervicogenic headache: Evidence that the neck is a pain generator. *Headache* 2010; 50:699-705.

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Fredriksen TA. Cervicogenic headache: Invasive procedures. *Cephalalgia* 2008; 28(suppl 1):39-40.

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Grgic V. [Cervicogenic headache: Etiopathogen-

esis, characteristics, diagnosis, differential diagnosis and therapy]. *Lijec Vjesn* 2007; 129:230-236.

Hoppenfeld JD. Cervical facet arthropathy and occipital neuralgia: Headache culprits. *Current Pain and Headache Reports* 2010; 14:418-423.

Leone M, D'Amico D, Grazzi L, Attanasio A, Bussone G. Cervicogenic headache: A critical review of the current diagnostic criteria. *Pain* 1998; 78:1-5.

Martelletti P, van Suijlekom H. Cervicogenic headache: Practical approaches to therapy. *CNS Drugs* 2004; 18:793-805.

Mehnert MJ, Freedman MK. Update on the role of z-joint injection and radiofrequency neurotomy for cervicogenic headache. *Pm R* 2013; 5:221-227.

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Exclusion Reason: Not Intraarticular Injection

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Exclusion Reason: Duplicate Report

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Exclusion Reason: Facet Joint Injection Done Together With Cervical Nerve Blockade

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Exclusion Reason: Article not in English, no Translator Available

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Exclusion Reason: Lack of Outcome Data

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Antonaci F, Ghirmai S, Bono G, Sandrini G, Nappi G. Cervicogenic headache: Evaluation of the original diagnostic criteria. *Cephalalgia* 2001; 21:573-583.