



Appendix A: Search Summary: (Supplementary file)

Date:	March 2, 2022
Requestor:	Vishal Uppal
Research Question:	PDPH guideline

Search strategy was based on the following eight questions. Question 4 (a & b) and Q 6 (a & b) were split for presentation in the manuscript which led to a total of 10 questions. Question 3 (When should one suspect the patient to have PDPH?) was moved up to question 1 to improve the flow of the manuscript.

1. What are patient factors associated with the incidence of PDPH?
2. What are the performer and procedural characteristics that are associated with the risk for PDPH?
3. When should one suspect the patient to have PDPH?
4. Conservative and pharmacological measures
 - a. Is there any evidence regarding prophylactic treatment of ADP?
 - b. What are conservative and pharmacological measures shown to be of benefit in the management of PDPH?
5. What procedural interventions have shown to be of benefits in the management of PDPH, and when to choose them over conservative and pharmacological measures?
6.
 - a. Is preprocedural advanced imaging needed before an epidural blood patch for PDPH?
 - b. What are contraindications or considerations before proceeding with an epidural blood patch for PDPH?
7. Epidural Blood Patch: What is the ideal imaging guidance, volume, level, approach (e.g., transforaminal or interlaminar), and timing for the performance of EBP, and how soon can they be repeated?
8. What follow-up should a patient with PDPH receive (including communication with primary health care providers)? What are the long-term complications of PDPH.

Results Summary:

Database: MEDLINE (Ovid)

Search date: March 2, 2022.

Question #	Total search results	Duplicates removed	De-duplicated total
Question 1	1715	4	1711
Question 2	1626	3	1623
Question 3	1056	3	1053
Question 4	371	1	370
Question 5	490	0	490
Question 6	270	1	269
Question 7	617	1	616
Question 8	312	0	312

PRISMA-S Checklist Items

Citation for PRISMA-S:

Rethlefsen, M.L., Kirtley, S., Waffenschmidt, S. et al. PRISMA-S: an extension to the PRISMA Statement for Reporting Literature Searches in Systematic Reviews. *Syst Rev* 10, 39 (2021).

<https://doi.org/10.1186/s13643-020-01542-z>

Information Sources and Methods

Checklist item	Corresponding information
Name each individual database searched, stating the platform for each.	MEDLINE All (Ovid)
If databases were searched simultaneously on a single platform, state the name of the platform, listing all of the databases searched.	
List any study registries searched.	
Describe any online or print source purposefully searched or browsed (e.g., tables of contents, print conference proceedings, web sites), and how this was done.	
Indicate whether cited references or citing references were examined, and describe any methods used for locating cited/citing references (e.g., browsing reference lists, using a citation index, setting up email alerts for references citing included studies).	
Indicate whether additional studies or data were sought by contacting authors, experts, manufacturers, or others.	
Describe any additional information sources or search methods used.	

Search Strategies

Checklist item	Corresponding information
Include the search strategies for each database and information source, copied and pasted exactly as run.	Provided below

Specify that no limits were used, or describe any limits or restrictions applied to a search (e.g., date or time period, language, study design) and provide justification for their use.	A publication date limit of 1960-present was applied. Animal studies were removed. The results were also limited to English language.
Indicate whether published search filters were used (as originally designed or modified), and if so, cite the filter(s) used.	
Indicate when search strategies from other literature reviews were adapted or reused for a substantive part or all of the search, citing the previous review(s).	
Report the methods used to update the search(es) (e.g., rerunning searches, email alerts).	
For each search strategy, provide the date when the last search occurred.	The search was run on March 2, 2022

Peer Review and Managing Records

Checklist item	Corresponding information
Describe any search peer review process.	
Document the total number of records identified from each database and other information sources.	See table above
Describe the processes and any software used to deduplicate records from multiple database searches and other information sources.	Results were deduplicated using 8 different Covidence projects – 1 project per question.

Search Strategies

Database: MEDLINE (Ovid)

Search date: March 2, 2022.

Ovid MEDLINE(R) ALL <1946 to March 01, 2022>

Line	Search terms	Results	Notes
1	(Post dural puncture headache* or postdural puncture headache* or PDPH* or PLPH* or spinal headache*).ti,ab,kw,kf.	1663	
2	("Post lumbar puncture" adj2 headache*).ti,ab,kw,kf.	200	
3	Post-Dural Puncture Headache/	703	
4	or/1-3	1988	
5	exp animals/ not humans.sh.	4965507	
6	4 not 5	1972	
7	limit 6 to yr="1960 -Current"	1931	
8	limit 7 to english language	1715	PDPH concept
9	(risk or risks or epidural or spinal* or dural puncture or trainee* or learner* or student* or needle* or lumbar or thoracic or attempt* or traumatic or atraumatic or diagnostic tap or anesthesia or analgesia or accidental or unintended or inadvertent).ti,ab,kw,kf.	4141065	
10	Risk/	127451	
11	exp Injections, Spinal/	16938	
12	Epidural Space/	4753	
13	Spinal Puncture/	6566	
14	Needles/	16679	
15	exp Analgesia/	47065	
16	exp Anesthesia/	200224	
17	exp Students, Health Occupations/	80126	
18	or/9-17	4296437	
19	((clinical or laboratory) adj4 (feature* or sign or signs)).ti,ab,kw,kf.	254010	
20	(diagnos* or symptom*).ti,ab,kw,kf.	3722920	
21	exp Diagnosis/	9029577	
22	or/19-21	11052079	
23	(prophylactic or prophylaxis or bed rest or abdominal binder* or hydrat* or caffeine or theophylline* or acetaminophen or paracetamol or NSAID* or anti-inflammatory or antiinflammatory or ibuprofen or diclofenac or celecoxib or triptan* or tryptamine or gabapentinoid or gabapentin or pregabalin or neostigmine or opioid* or steroid* or codeine or tramadol or morphine or oxycodone or hydrocodone or hydromorphone or aminophylline or synacthen or cosyntropin or hydrocortisone or dexamethasone or sumatriptan or methylergometrin* or methylergonovine or	1012026	

	DDAVP or desmopressin or ondansetron or mannitol).ti,ab,kw,kf.		
24	Bed Rest/	4039	
25	Caffeine/	24360	
26	Theophylline/	19772	
27	Acetaminophen/	19592	
28	anti-inflammatory agents, non-steroidal/ or celecoxib/ or diclofenac/ or ibuprofen/	83648	
29	Tryptamines/	5473	
30	exp gamma-Aminobutyric Acid/	46256	
31	Neostigmine/	4887	
32	gabapentin/ or pregabalin/	5905	
33	analgesics, opioid/ or morphine/ or tramadol/ or exp codeine/ or hydromorphone/	86410	
34	steroids/ or exp hydrocortisone/ or exp dexamethasone/	160917	
35	Aminophylline/	4231	
36	Cosyntropin/	1632	
37	Sumatriptan/	2272	
38	Methylergonovine/	499	
39	exp Vasopressins/	36542	
40	Ondansetron/	3229	
41	exp Mannitol/	12955	
42	or/23-41	1221953	
43	(saline or intrathecal or sphenopalatine ganglion block or SPGB or occipital nerve block* or acupuncture or fibrin glue or dextran* or gelatin* or starch* or morphine or infusion* or injection*).ti,ab,kw,kf.	1166350	
44	exp Isotonic Solutions/	9743	
45	Sphenopalatine Ganglion Block/	94	
46	exp Nerve Block/	24725	
47	exp Acupuncture Therapy/	27100	
48	Fibrin Tissue Adhesive/	4988	
49	Dextrans/	24837	
50	Gelatin/	13596	
51	Starch/ or morphine/	59041	
52	or/43-51	1220137	
53	(radiography or radiolog* or x-ray* or computed tomography or CT or magnetic resonance imaging or MRI or myelography or ultrasound).ti,ab,kw,kf.	1729824	
54	((brain or head or cranial or diagnostic) adj1 imaging).ti,ab,kw,kf.	35724	
55	exp Diagnostic Imaging/	2817892	
56	or/53-55	3650117	
57	blood patch*.ti,ab,kw,kf.	1590	
58	Blood Patch, Epidural/	984	
59	or/57-58	1811	
60	(chronic headache* or back pain or subdural hematoma or cerebral venous sinus thrombosis or CVST or nerve palsy or seizure* or hard of hearing).ti,ab,kw,kf.	211168	

61	((intracerebral or cerebral or stroke) adj1 (hemorrhag* or haemorrhag*)).ti,ab,kw,kf.	32126	
62	((hearing or visual*) adj impair*).ti,ab,kw,kf.	29737	
63	exp Back Pain/	42421	
64	exp Intracranial Hemorrhages/	76419	
65	exp Sinus Thrombosis, Intracranial/	4000	
66	Paralysis/	21253	
67	Seizures/	58545	
68	exp Cerebral Hemorrhage/	36094	
69	exp Hearing Loss/	74231	
70	exp Vision Disorders/	75874	
71	or/60-70	508093	
72	8 and 18	1626	Question 2 results
73	8 and 22	1056	Question 3 results
74	8 and 42	371	Question 4 results
75	8 and 52	490	Question 5 results
76	8 and 56	270	Question 6 results
77	8 and 59	617	Question 7 results
78	8 and 71	312	Question 8 results