# Supplemental Online Content

D'Antona L, Jaime Merchan MA, Vassiliou A, et al. Clinical presentation, investigation findings, and treatment outcomes of spontaneous intracranial hypotension syndrome: a systematic review and meta-analysis. *JAMA Neurol*. Published online January 4, 2021. doi:10.1001/jamaneurol.2020.4799



This supplemental material has been provided by the authors to give readers additional information about their work.

## eTable 1. Variables included in the systematic review

| Domain | Variables |
|---|---|
| Study characteristics | Authors, affiliations, SIH diagnostic criteria, study design (prospective/retrospective, observational/interventional), number of patients. |
| Demographics | Age (mean, SD, range), sex (male/female). |
| Risk factors | Patients with connective tissue disorders, spinal pathologies, other risk factors. |
| Clinical presentation | Symptoms duration (mean, SD, range), headache (n. patients and characteristics), nausea/vomiting, neck pain/stiffness, hearing impairment, tinnitus, other ear signs/symptoms, dizziness, vertigo, photophobia, diplopia, other visual signs/symptoms, reduced level of consciousness, cognitive disturbances, back pain, movement disturbances, other signs/symptoms. |
| Brain MRI | N. of investigations performed, diffuse pachymeningeal enhancement, subdural collections, brain sagging, pituitary gland enlargement, venous engorgement, slit ventricles, tonsillar descent, normal brain MRI appearances, other findings. |
| Spinal imaging | For each type of spinal investigation: n. of investigations performed, n. of extradural CSF detection, type of leak detection (specific leak site, broad area, unspecified). Type of investigations: spine MRI, CT myelogram, radionuclide cisternography, MR myelography (with and without intrathecal gadolinium), other spinal investigations. |
| CSF leak location | N. of leaks identified, leaks location (cervical, cervico-thoracic, thoracic, thoraco-lumbar, lumbar, lumbo-sacral, sacral, multiple leaks). |
| CSF pressure | N. of lumbar punctures (or CSF pressure measurements), pressure findings: low (<60 $mmH_20$), normal (60-200 $mmH_20$), high (>200 $mmH_20$). |
| Treatments and outcomes | Conservative treatment: n. of patients treated, duration of treatment, outcomes, type (bed rest, hydration, caffeine, analgesia, steroids);<br>EBP: n. of patients treated, duration of treatment, outcomes, n. of EBPs, type (targeted, nontargeted, large(>20ml), small);<br>Other treatments. |

CSF: Cerebrospinal Fluid; EBP: Epidural Blood Patch; SD: Standard Deviation.

## eTable 2. Inclusion criteria for meta-analyses

| Metanalyses | Inclusion criteria for metanalyses |
|---|---|
| Age | Mean age and SD specified. |
| Sex | N. of males/females specified. |
| Symptoms duration | Mean duration and SD specified. |
| Sign/Symptoms | For each sign/symptom: n. of patients with the sign/symptom specified. |
| Brain MRI | N. of investigations, type of positive findings and proportion of positive findings specified. |
| Spinal imaging | N. of investigations, type of investigations and proportion of positive findings (extradural CSF) specified. |
| CSF pressure | N. of investigations and findings (n. low pressure, normal pressure and high pressure) specified. Studies in which all patients had low CSF opening pressure were excluded. |
| Outcomes of conservative treatment | N. of patients who received treatment and n. good outcomes specified. Studies in which all (or none) of the patients had good outcomes were excluded. |
| Outcomes of first EBP | N. of patients who received treatment and n. good outcomes after 1st EBP specified. Studies in which all (or none) of the patients had good outcomes were excluded. |
| Outcomes of nontargeted/targeted EBP | N. of patients who received treatment, type of EBP (nontargeted or targeted) and n. good outcomes after 1st EBP specified. Studies in which all (or none) of the patients had good outcomes were excluded. |
| Outcomes of small/large EBP | N. of patients who received treatment, type of EBP (small or large) and n. good outcomes after 1st EBP specified. Studies in which all (or none) of the patients had good outcomes were excluded. |
| All | Studies with 0% or 100% proportion of findings were excluded.<br>For each meta-analysis, if more than one study from the same author met the inclusion criteria, only the study reporting the largest number of patients was included. |

CSF: Cerebrospinal Fluid; EBP: Epidural Blood Patch; SD: Standard Deviation.

## eTable 3. List of selected studies and inclusion for meta-analyses

| Reference | Author (year) | Quality grading[a] | Patients (n) | Meta-analyses |
|---|---|---|---|---|
| **(1)** | Cebeci et al (2020) | Fair | 20 | Age, sex, other symptoms, MRMG, leak location |
| **(2)** | Davies et al (2020) | Good | 86 | Sex, other symptoms, conservative treatment |
| **(3)** | Wang et al (2020) | Good | 20 | |
| **(4)** | Dobrocky et al (2019) | Good | 56 | Age, sex, brain MRI |
| **(5)** | Li et al (2019) | Fair | 40 | Age, sex, cinical presentation, brain MRI, LPOP |
| **(6)** | Levi et al (2019) | Good | 101 | Age, sex, headache, other symptoms, nontargeted EBP, small EBP |
| **(7)** | Kim et al (2019) | Good | 43 | Age, sex, symptoms duration, headache, other symptoms, brain MRI |
| **(8)** | Schievink et al (2019) | Good | 113 | Age, symptoms duration, headache |
| **(9)** | Schievink et al (2019) | Good | 49 | DSM |
| **(10)** | Pagani-Estévez et al (2019) | Fair | 202 | First EBP |
| **(11)** | Fichtner et al (2019) | Fair | 27 | LPOP, leak location |
| **(12)** | Martin et al (2019) | Fair | 94 | Other symptoms, first EBP |
| **(13)** | Kinsman et al (2019) | Fair | 144 | Sex |
| **(14)** | Farb et al (2019) | Fair | 31 | Sex, brain MRI, spine MRI, DSM, leak location |
| **(15)** | Griffin et al (2019) | Good | 92 | |
| **(16)** | Ohtonary et al (2018) | Fair | 19 | Age, sex, headache, other symptoms, LPOP, leak location, conservative, |
| **(17)** | Murakami et al (2018) | Good | 38 | Age, sex |
| **(18)** | Lee et al (2018) | Fair | 62 | Age, sex, leak location, first EBP, targeted EBP |
| **(19)** | Schievink et al (2018) | Good | 29 | Conservative treatment |
| **(20)** | Xia et al (2018) | Good | 156 | Conservative treatment |
| **(21)** | Ahn et al (2018) | Good | 116 | Sex, brain MRI, spine MRI, CTM, leak location, first EBP, nontargeted EBP, targeted EBP |
| **(22)** | Yagi et al (2018) | Fair | 37 | Sex, symptoms duration, other symptoms, brain MRI, leak location, conservative, first EBP, large EBP |
| **(23)** | Tsai et al (2018) | Fair | 27 | Symptoms duration, brain MRI |
| **(24)** | Takai et al (2018) | Fair | 11 | Symptoms duration, LPOP |
| **(25)** | Dobrocky et al (2018) | Fair | 14 | |
| **(26)** | Clark et al (2018) | Fair | 101 | |
| **(27)** | Ferrante et al (2018) | Fair | 35 | |
| **(28)** | Beck et al (2018) | Fair | 47 | |
| **(29)** | Schievink et al (2018) | Fair | 15 | |
| **(30)** | Yao et al (2017) | Fair | 206 | Age, sex, symptoms duration, headache, brain MRI, LPOP |
| **(31)** | Wu et al (2017) | Good | 150 | Age, sex, symptoms duration, headache, other symptoms, brain MRI, MRM, leak location, first EBP, targeted EBP |
| **(32)** | Beck et al (2017) | Good | 31 | Other symptoms |
| **(33)** | He et al (2017) | Good | 165 | Other symptoms, CTM, MRM, leak location, conservative, first EBP, targeted EBP, small EBP |
| **(34)** | Choi et al (2017) | Good | 95 | Sex, headache, other symptoms, brain MRI, leak location, first EBP, nontargeted EBP, targeted EBP, small EBP |
| **(35)** | Kim et al (2017) | Fair | 128 | Sex, headache, headache location, other symptoms, brain MRI, first EBP |
| **(36)** | Kranz et al (2017) | Good | 22 | |
| **(37)** | Chen et al (2017) | Good | 19 | |
| **(38)** | Chen et al (2017) | Good | 23 | |
| **(39)** | Chen et al (2016) | Fair | 45 | Age, sex, headache, other symptoms, conservative, first EBP |
| **(40)** | So et al (2016) | Fair | 34 | Age, sex, symptoms duration, headache, leak location, first EBP, small EBP |
| **(41)** | Amemiya et al (2016) | Good | 15 | Age, symptoms duration, other symptoms |
| **(42)** | Kranz et al (2016) | Good | 99 | CTM |
| **(43)** | Schievink et al (2016) | Good | 53 | DSM |
| **(44)** | Ferrante et al (2016) | Fair | 106 | First EBP, large EBP |

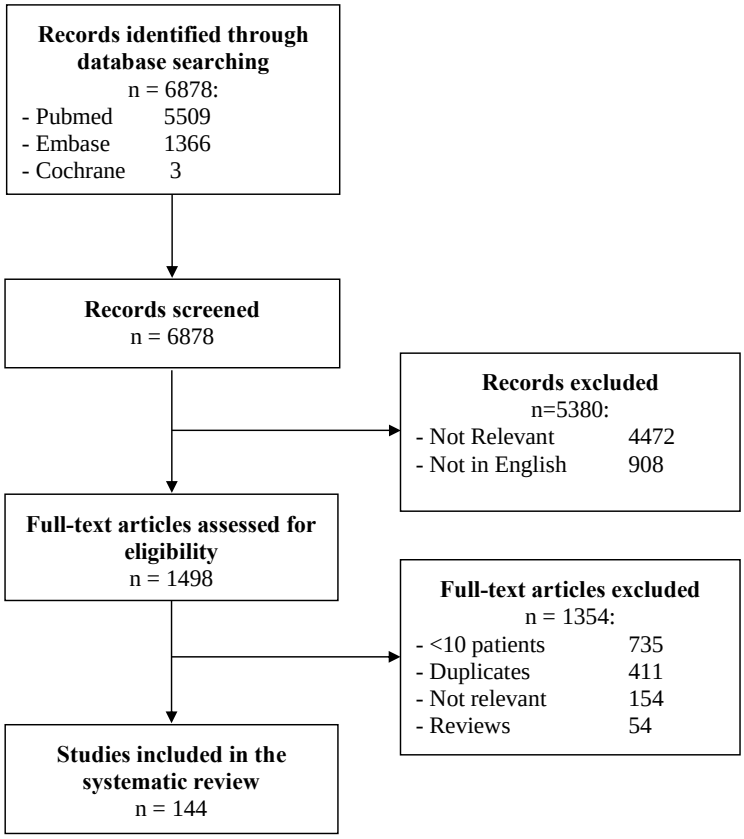
| Reference | Author (year) | Quality grading[a] | Patients (n) | Meta-analyses |
|---|---|---|---|---|
| **(45)** | Amrhein et al (2016) | Fair | 35 | First EBP, targeted EBP, small EBP |
| **(46)** | Fichtner et al (2016) | Good | 39 | Headache |
| **(47)** | Monteith et al (2016) | Fair | 12 | Headache, brain MRI, RIC |
| **(48)** | Schievink et al (2016) | Good | 568 | Sex |
| **(49)** | Hori et al (2016) | Good | 22 | Sex, brain MRI |
| **(50)** | Karm et al (2016) | Fair | 104 | Sex, brain MRI, first EBP, targeted EBP |
| **(51)** | Ansel et al (2016) | Fair | 16 | Sex, brain MRI, spine MRI, leak location, first EBP, nontargeted EBP, small EBP |
| **(52)** | Takahashi et al (2016) | Fair | 169 | Sex, headache, brain MRI, RIC, LPOP, leak location, conservative, first EBP |
| **(53)** | Capizzano et al (2016) | Fair | 41 | Sex, headache, other symptoms, brain MRI |
| **(54)** | Tanaka et al (2016) | Good | 40 | Sex, headache, other symptoms, brain MRI |
| **(55)** | Kim et al (2016) | Fair | 140 | Sex, headache, other symptoms, brain MRI, spine MRI, conservative, first EBP, small EBP |
| **(56)** | Choi et al (2016) | Fair | 18 | Sex, leak location, first EBP, targeted EBP |
| **(57)** | Kranz et al (2016) | Good | 89 | Symptoms duration |
| **(58)** | Ferrante et al (2016) | Good | 28 | Symptoms duration, headache location |
| **(59)** | Beck et al (2016) | Good | 15 | |
| **(60)** | Verdoorn et al (2016) | Fair | 129 | |
| **(61)** | Wan et al (2016) | Fair | 15 | |
| **(62)** | Kranz et al (2015) | Good | 106 | Age, sex, brain MRI, LPOP |
| **(63)** | Idrissi et al (2015) | Fair | 24 | Age, sex, headache, headache location, other symptoms, brain MRI, spine MRI, RIC, leak location, conservative, first EBP, |
| **(64)** | Thielen et al (2015) | Fair | 14 | Leak location |
| **(65)** | Joo et al (2015) | Fair | 76 | Leak location, small EBP |
| **(66)** | Feltracco et al (2015) | Fair | 18 | Sex, brain MRI, first EBP, nontargeted EBP |
| **(67)** | Schievink et al (2015) | Fair | 13 | |
| **(68)** | Schievink et al (2015) | Good | 42 | |
| **(69)** | Xia et al (2015) | Fair | 93 | |
| **(70)** | Yoshida et al (2014) | Fair | 12 | Age, sex, headache, other symptoms, brain MRI, leak location, first EBP, targeted EBP, small EBP |
| **(71)** | Chazen et al (2014) | Good | 24 | Sex, CTM, MRMG, LPOP |
| **(72)** | Pimienta et al (2014) | Fair | 50 | |
| **(73)** | Schievink et al (2014) | Fair | 338 | |
| **(74)** | Tung et al (2014) | Good | 17 | |
| **(75)** | Hashizume et al (2013) | Fair | 29 | Age, sex, other symptoms, brain MRI, RIC, LPOP, conservative, first EBP, targeted EBP |
| **(76)** | Schievink et al (2013) | Fair | 24 | Headache location |
| **(77)** | Hosoya et al (2013) | Fair | 100 | Spine MRI, MRM |
| **(78)** | Ferrante et al (2013) | Fair | 10 | |
| **(79)** | Franzini et al (2013) | Fair | 80 | |
| **(80)** | Kranz et al (2013) | Good | 19 | |
| **(81)** | Reinstein et al (2013) | Good | 50 | |
| **(82)** | Albes et al (2012) | Fair | 26 | Age, sex, CTM, leak location, first EBP, targeted EBP, large EBP |
| **(83)** | Hasiloglu et al (2012) | Good | 25 | Age, sex, headache, LPOP, leak location |
| **(84)** | Hashizume et al (2012) | Fair | 12 | Leak location |
| **(85)** | Akbar et al (2012) | Fair | 41 | MRMG |
| **(86)** | Luetmer et al (2012) | Fair | 151 | Spine MRI |
| **(87)** | Balkan et al (2012) | Fair | 11 | Symptoms duration, other symptoms, brain MRI, first EBP, targeted EBP |
| **(88)** | Schievink et al (2012) | Good | 33 | |
| **(89)** | Schievink et al (2012) | Fair | 20 | |
| **(90)** | Takeuchi et al (2012) | Fair | 15 | |
| **(91)** | Yoon et al (2011) | Fair | 30 | LPOP |
| **(92)** | Cho et al (2011) | Good | 56 | Sex, headache, brain MRI, leak location, first EBP, nontargeted EBP, targeted EBP, small EBP |
| **(93)** | Bonetto et al (2011) | Fair | 17 | Sex, symptoms duration, headache, other symptoms, brain MRI, conservative, first EBP, nontargeted EBP |
| **(94)** | Watanabe et al (2011) | Fair | 13 | Symptoms duration, headache, small EBP |
| **(95)** | Franzini et al (2011) | Fair | 74 | |

| Reference | Author (year) | Quality grading[a] | Patients (n) | Meta-analyses |
|---|---|---|---|---|
| **(96)** | Liu et al (2011) | Good | 55 | |
| **(97)** | Franzini et al (2010) | Fair | 28 | Leak location |
| **(98)** | Medina et al (2010) | Fair | 13 | Sex, headache, spine MRI, first EBP |
| **(99)** | Ferrante et al (2010) | Fair | 42 | Spine MRI, MRM, RIC |
| **(100)** | Horikoshi et al (2010) | Fair | 16 | Targeted EBP |
| **(101)** | Adachi et al (2009) | Fair | 10 | Age, sex, headache, other symptoms |
| **(102)** | Park et al (2009) | Fair | 12 | Age, sex, headache, other symptoms, brain MRI, RIC, LPOP, conservative |
| **(103)** | Su et al (2009) | Fair | 11 | Age, sex, headache, other symptoms, brain MRI, spine MRI, leak location, first EBP, nontargeted EBP |
| **(104)** | Mea et al (2009) | Good | 90 | Brain MRI |
| **(105)** | Wang et al (2009) | Fair | 19 | CTM |
| **(106)** | Shankar et al (2009) | Good | 17 | Sex, brain MRI |
| **(107)** | Mea et al (2009) | Fair | 90 | |
| **(108)** | Watanabe et al (2008) | Fair | 18 | Age, headache, spine MRI, LPOP |
| **(109)** | Schievink et al (2008) | Fair | 94 | Brain MRI, LPOP |
| **(110)** | Yoo et al (2008) | Fair | 15 | MRM, RIC, first EBP |
| **(111)** | Albayram et al (2008) | Good | 19 | MRMG |
| **(112)** | Hyun et al (2008) | Good | 30 | Sex, headache, other symptoms, brain MRI, RIC, LPOP, leak location, conservative, first EBP, small EBP |
| **(113)** | Tomoda et al (2008) | Fair | 27 | Sex, other symptoms, conservative treatment, MRM, LPOP, first EBP |
| **(114)** | Fuh et al (2008) | Fair | 53 | |
| **(115)** | Mea et al (2008) | Fair | 70 | |
| **(116)** | Mea et al (2007) | Good | 59 | Sex |
| **(117)** | Chung et al (2007) | Fair | 10 | |
| **(118)** | Farb et al (2007) | Good | 12 | |
| **(119)** | Lai et al (2007) | Fair | 40 | |
| **(120)** | Schievink et al (2007) | Fair | 11 | |
| **(121)** | Schievink et al (2007) | Fair | 80 | |
| **(122)** | Tsai et al (2007) | Fair | 17 | |
| **(123)** | Wiesemann et al (2006) | Fair | 10 | Age, sex, symptoms duration, headache, other symptoms, brain MRI, LPOP, conservative |
| **(124)** | Chung et al (2006) | Fair | 67 | RIC |
| **(125)** | Hannerz et al (2006) | Fair | 12 | Sex, headache, other symptoms, brain MRI, conservative, first EBP, nontargeted EBP, large EBP |
| **(126)** | Cohen-Gadol et al (2006) | Fair | 13 | Sex, headache, other symptoms, brain MRI, leak location |
| **(127)** | Chung et al (2005) | Fair | 53 | Age, spine MRI, conservative treatment |
| **(128)** | Kong et al (2005) | Fair | 13 | Age, symptoms duration, spine MRI, CTM, RIC, LPOP, conservative |
| **(129)** | Schievink et al (2005) | Fair | 33 | Leak location |
| **(130)** | Schievink et al (2005) | Fair | 20 | |
| **(131)** | Ferrante et al (2004) | Fair | 18 | LPOP |
| **(132)** | Berrior et al (2004) | Fair | 33 | Sex, symptoms duration, headache, other symptoms, brain MRI, first EBP, nontargeted EBP |
| **(133)** | Ferrante et al (2004) | Fair | 12 | |
| **(134)** | Schievink et al (2004) | Good | 18 | |
| **(135)** | Schievink et al (2004) | Good | 25 | |
| **(136)** | Miyazawa et al (2003) | Fair | 10 | Age, headache, other symptoms, brain MRI, RIC, LPOP, leak location |
| **(137)** | Chen et al (2003) | Fair | 13 | |
| **(138)** | Schievink et al (2003) | Good | 18 | |
| **(139)** | Lin et al (2002) | Fair | 15 | LPOP |
| **(140)** | Schrijver et al (2002) | Good | 20 | |
| **(141)** | Chung et al (2000) | Fair | 30 | Headache location |
| **(142)** | Chen et al (1999) | Good | 13 | |
| **(143)** | Schievink et al (1998) | Good | 10 | |
| **(144)** | Schievink et al (1996) | Fair | 11 | Spine MRI, RIC |

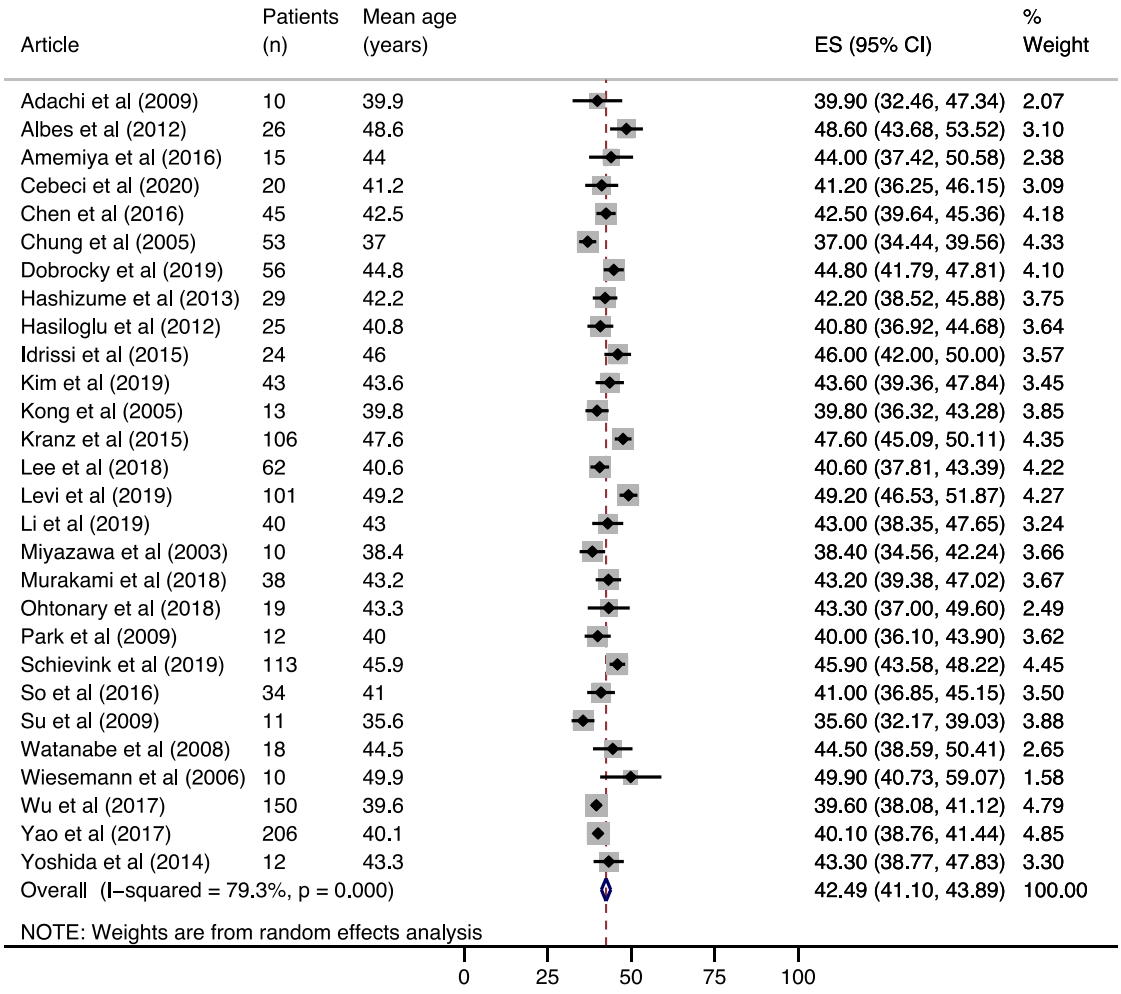
[a]Based on NIH Quality Assessment Tool for Case Series Studies

CTM: CT myelography, EBP: Epidural Blood Patch, LPOP: Lumbar Puncture Opening Pressure, MRM: MR Myelography, MRMG: MR myelography with intrathecal Gadolinium, RIC: Radionuclide Cisternography

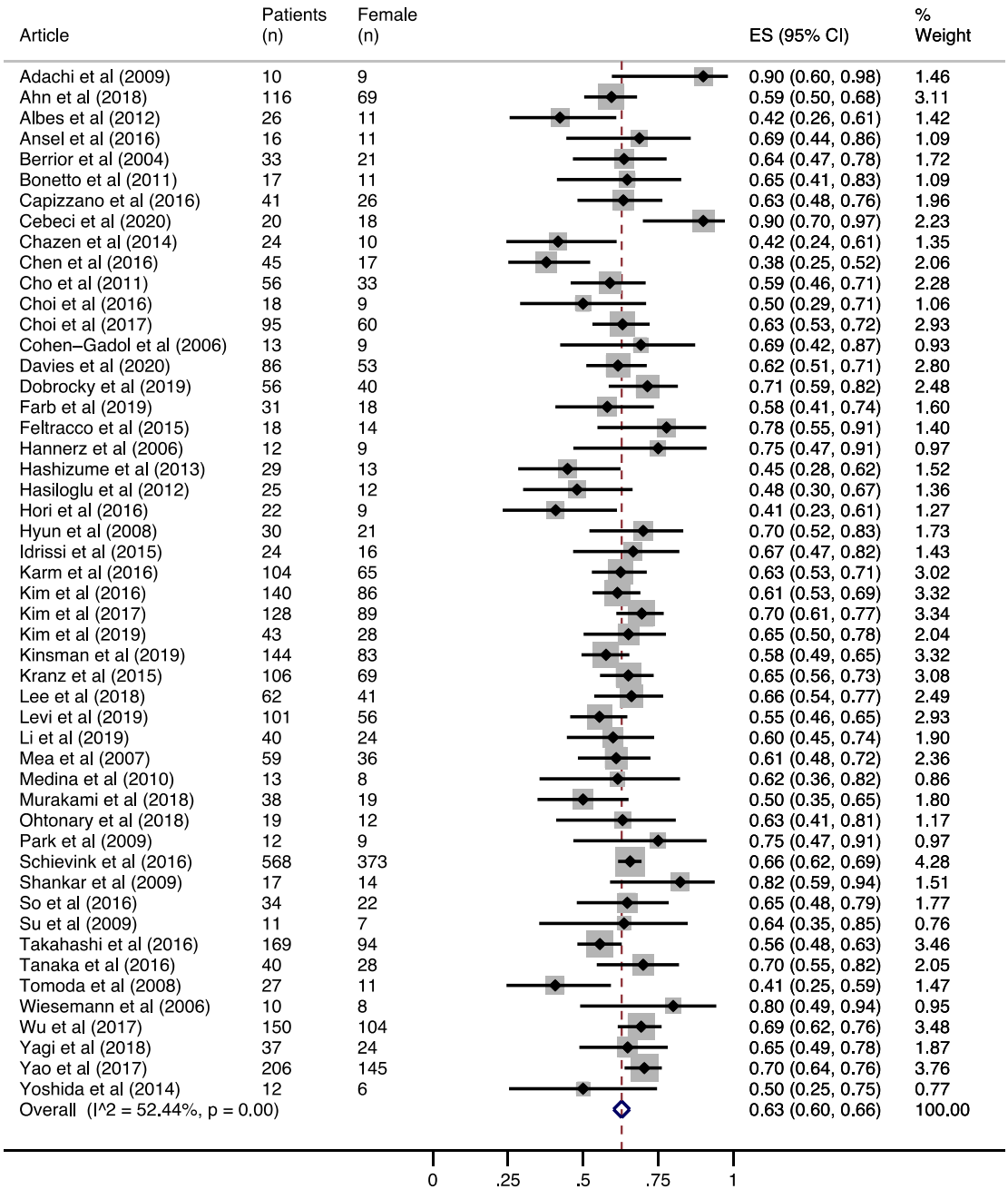
**eFigure 1. Flowchart of the selection process for articles**



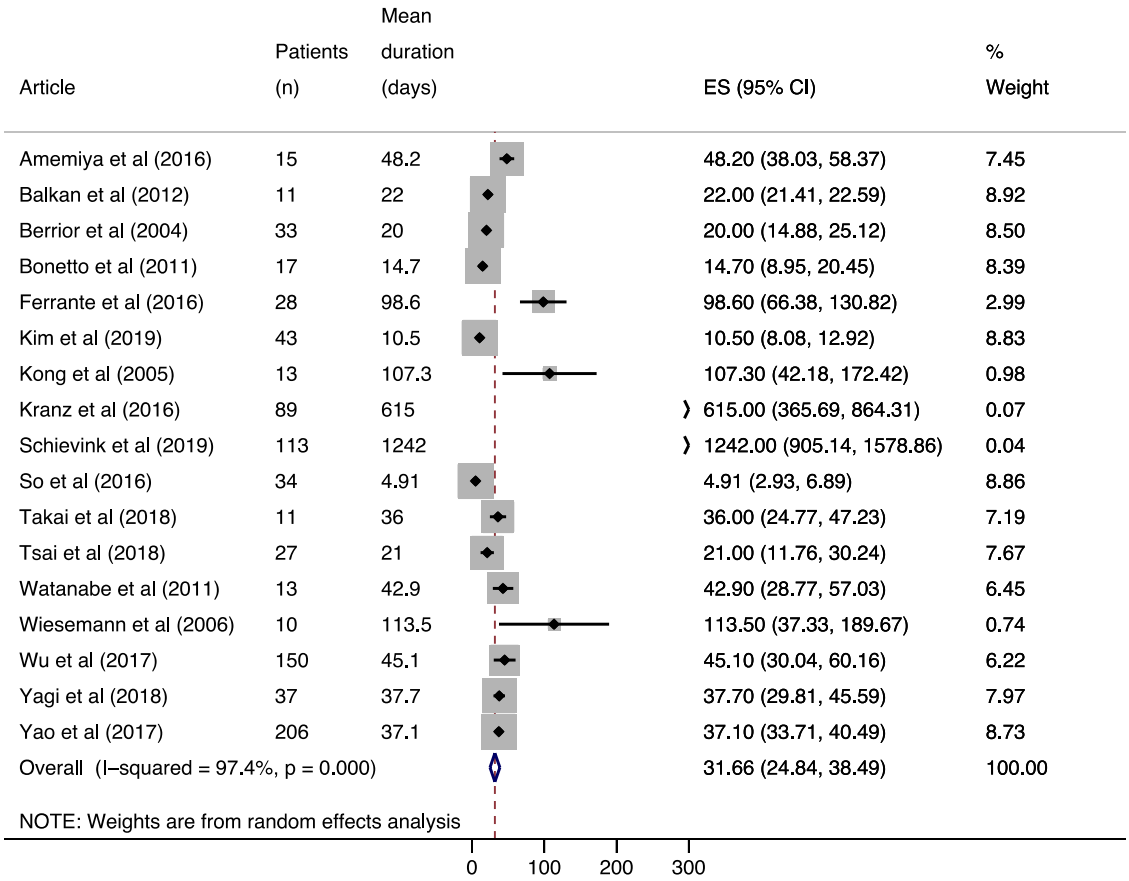
**eFigure 2. Age meta-analysis (mean years)**



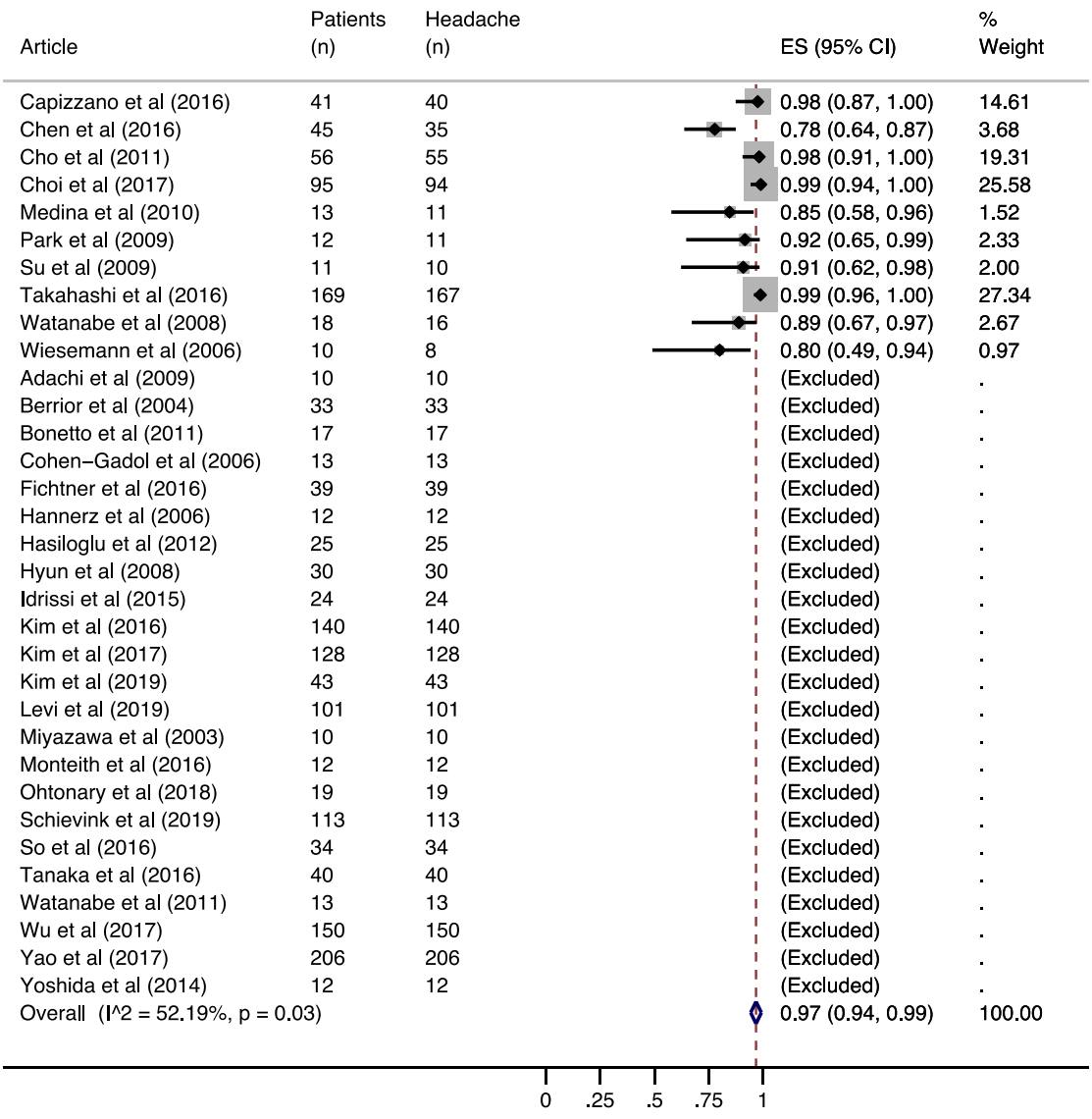
**eFigure 3. Sex meta-analysis (proportion of female patients)**



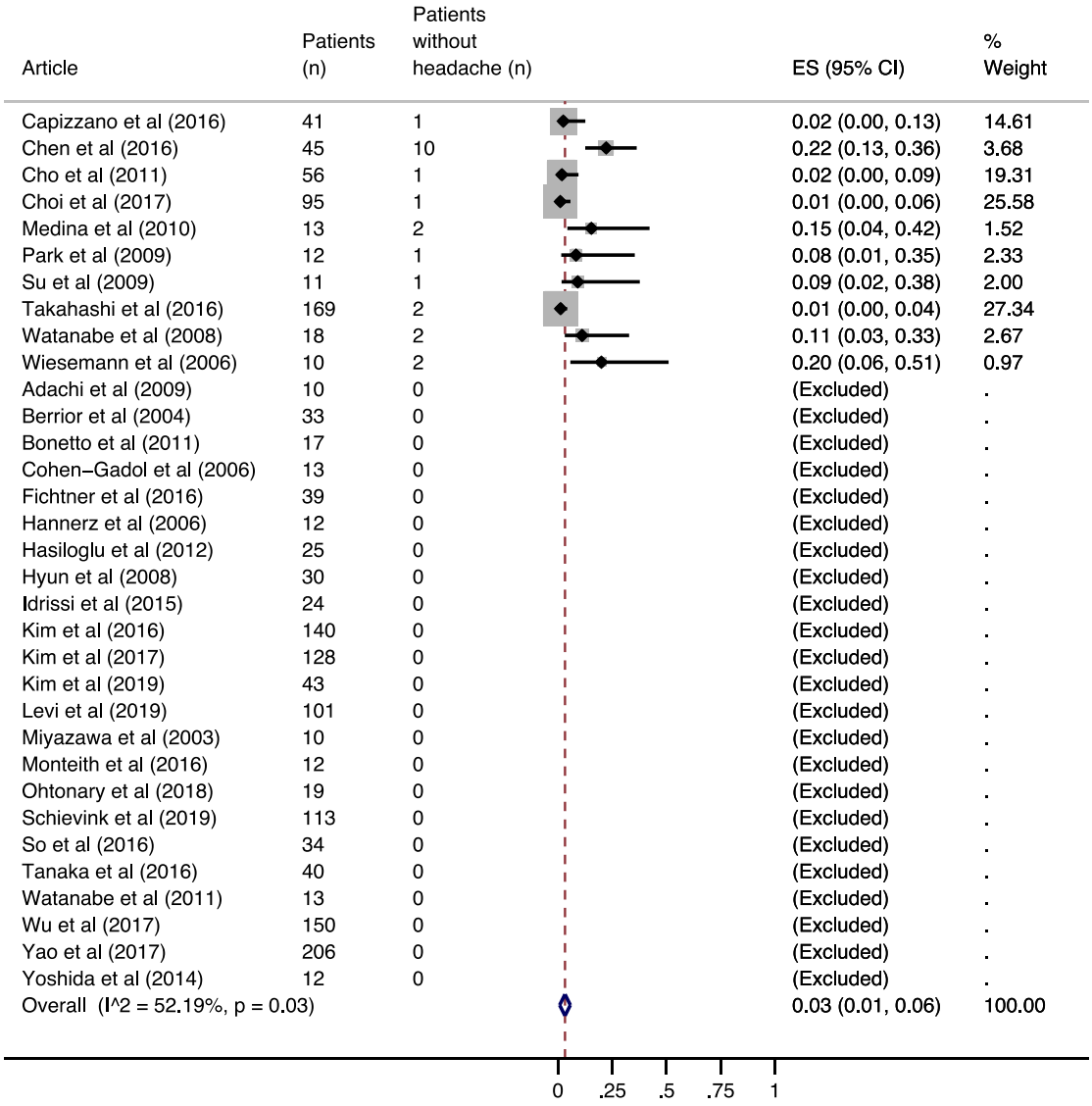
**eFigure 4. Symptoms duration meta-analysis (mean days)**



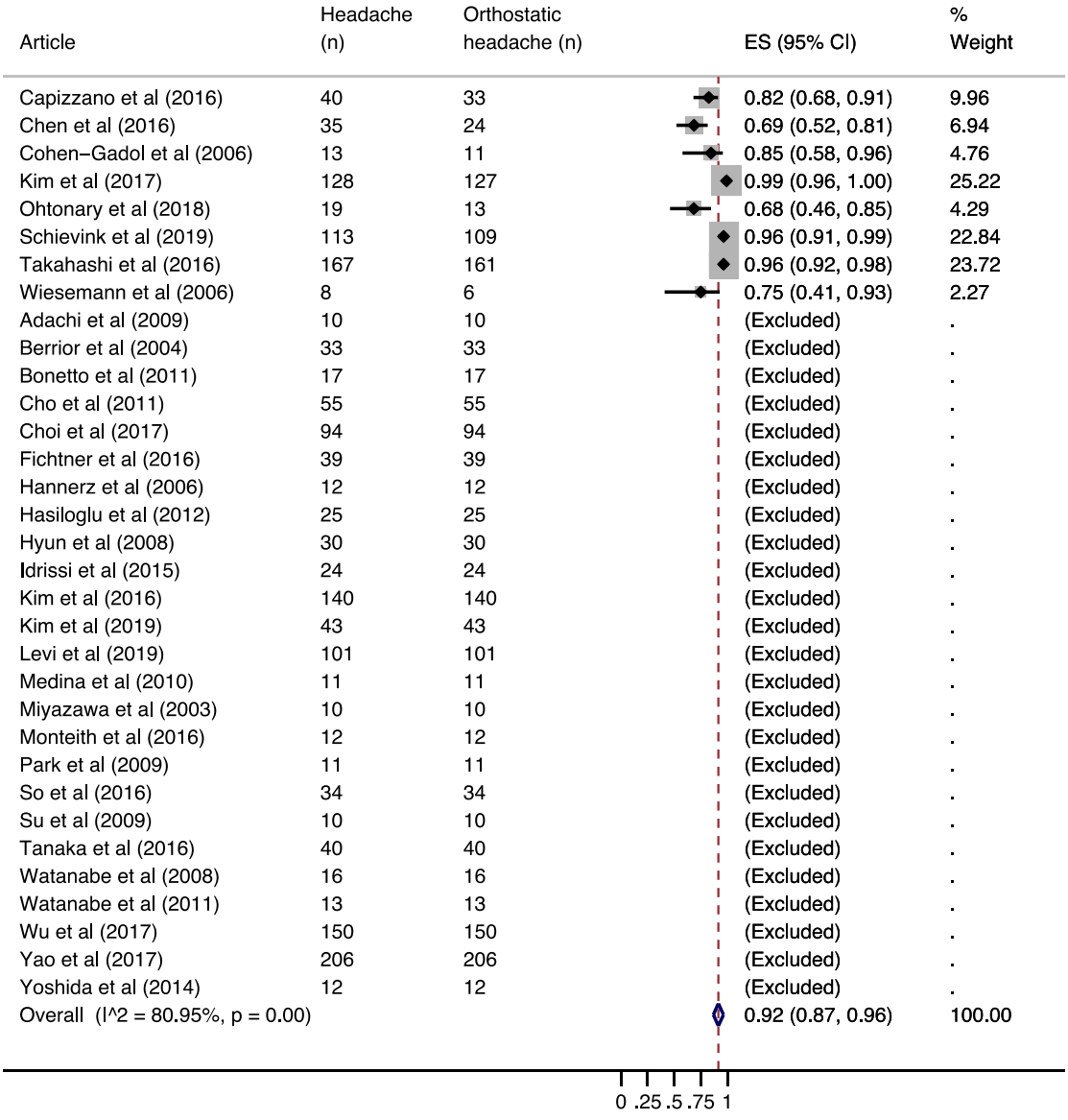
**eFigure 5a. Meta-analysis of proportions of patients with headache**



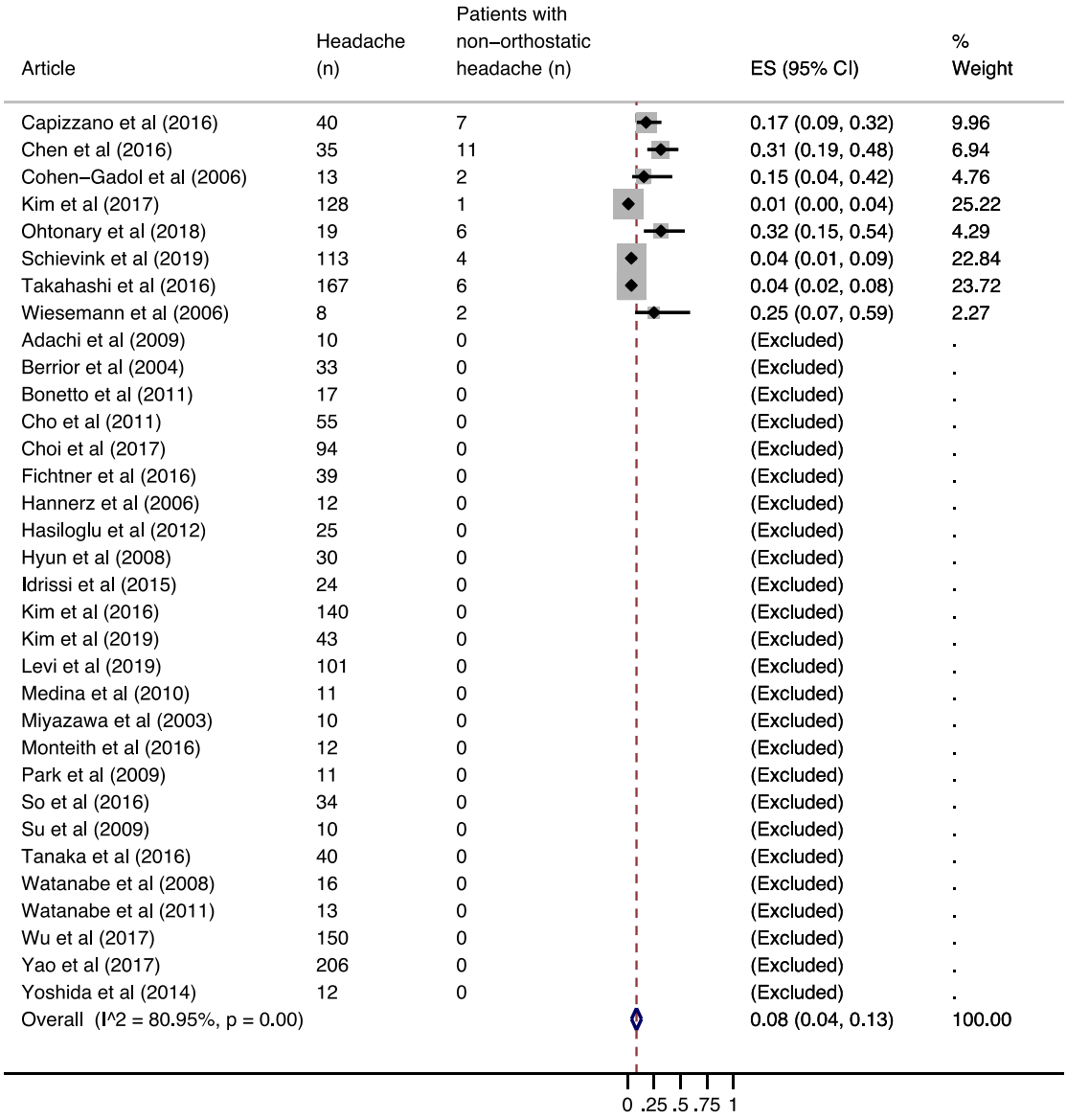
**eFigure 5b. Meta-analysis of proportions of patients without headache**



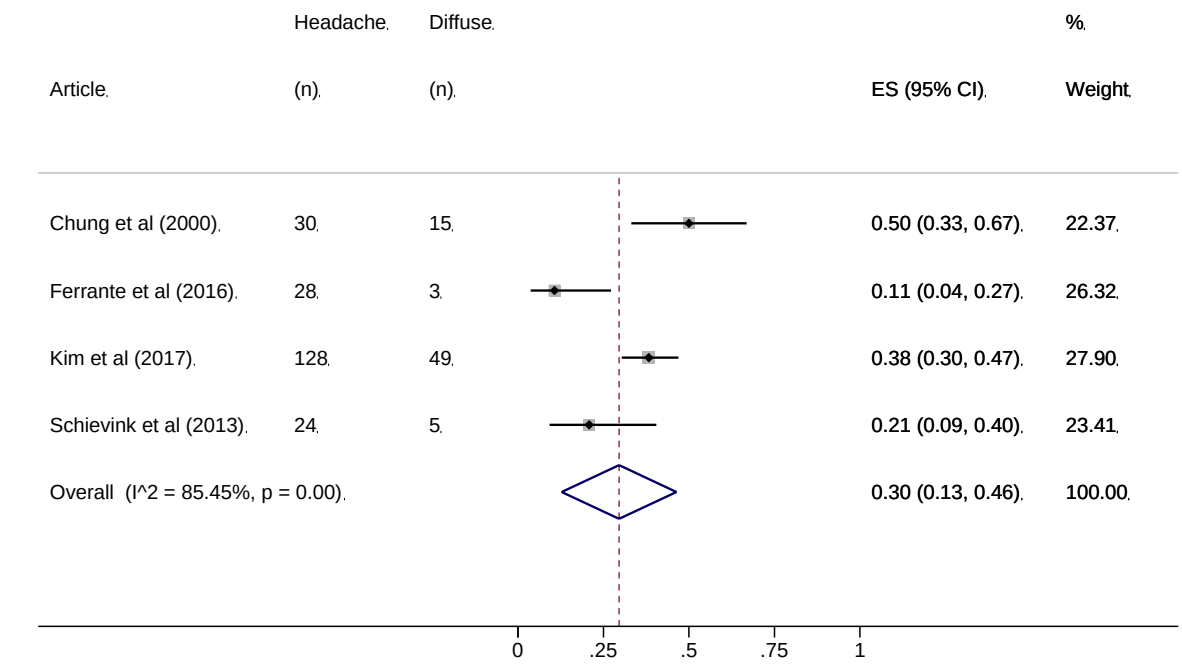
**eFigure 6a. Meta-analysis of proportions of patients with orthostatic headache**



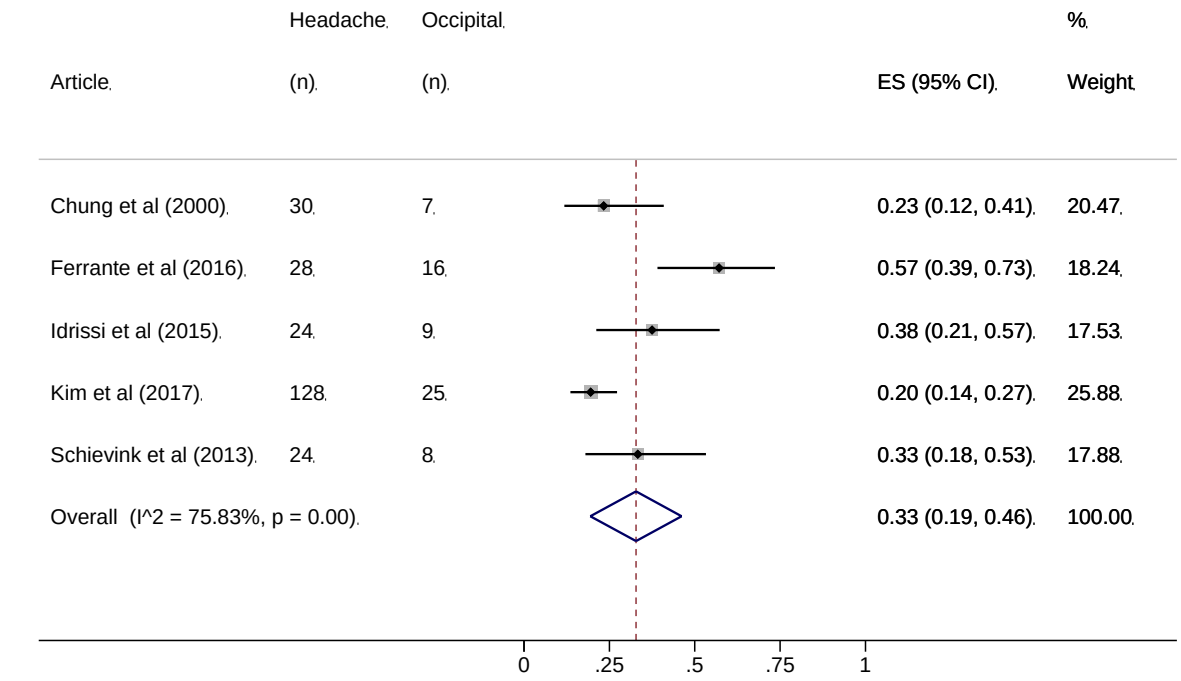
**eFigure 6b. Meta-analysis of proportions of patients with non-orthostatic headache**



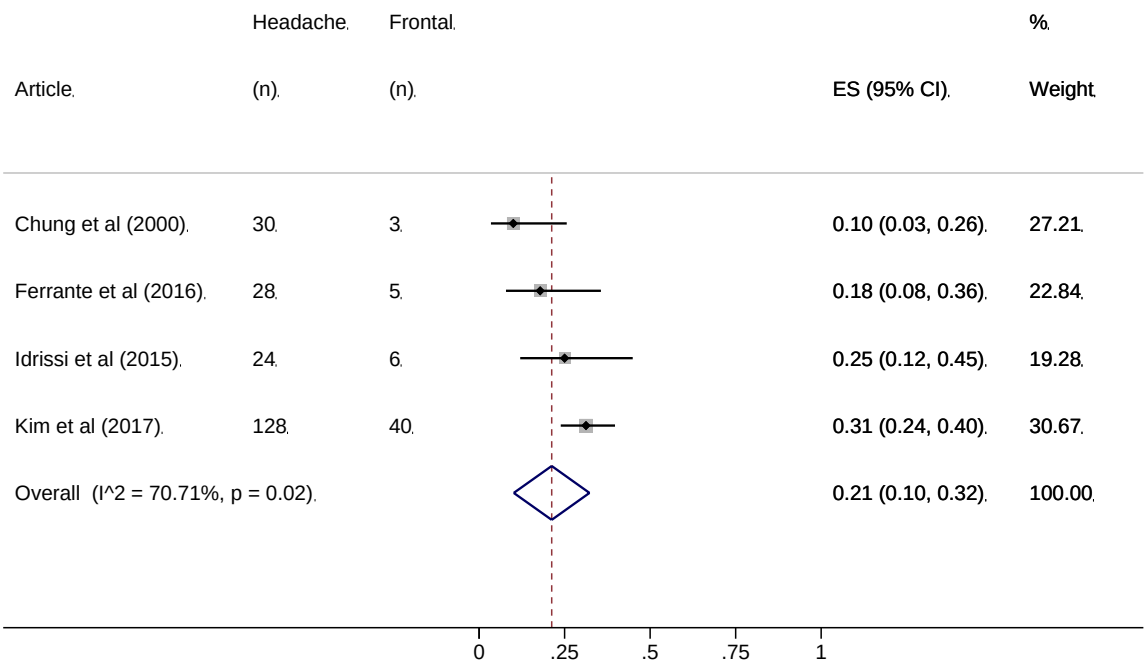
**eFigure 7a. Meta-analysis of proportions of headache location (diffuse)**



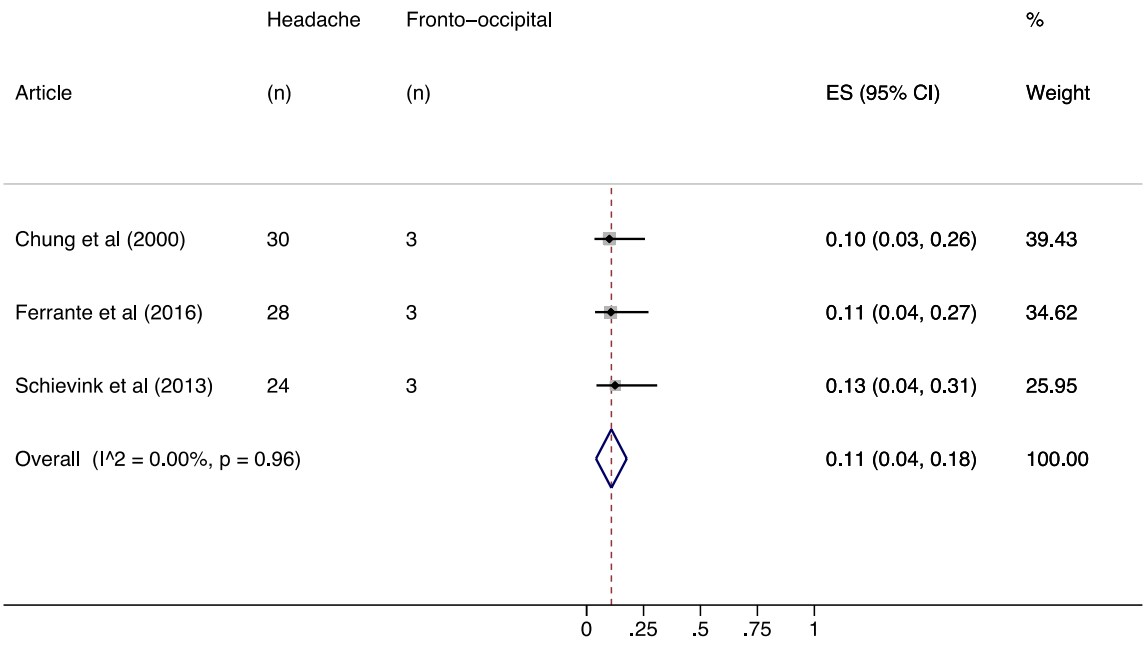

**eFigure 7b. Meta-analysis of proportions of headache location (occipital)**



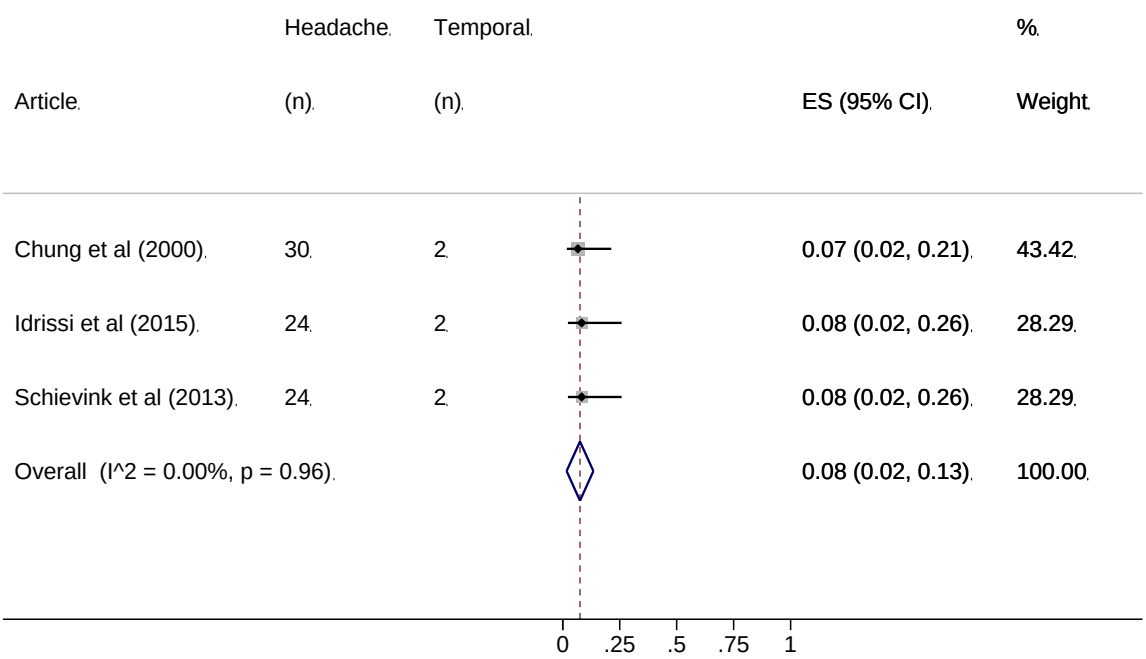
**eFigure 7c. Meta-analysis of proportions of headache location (frontal)**



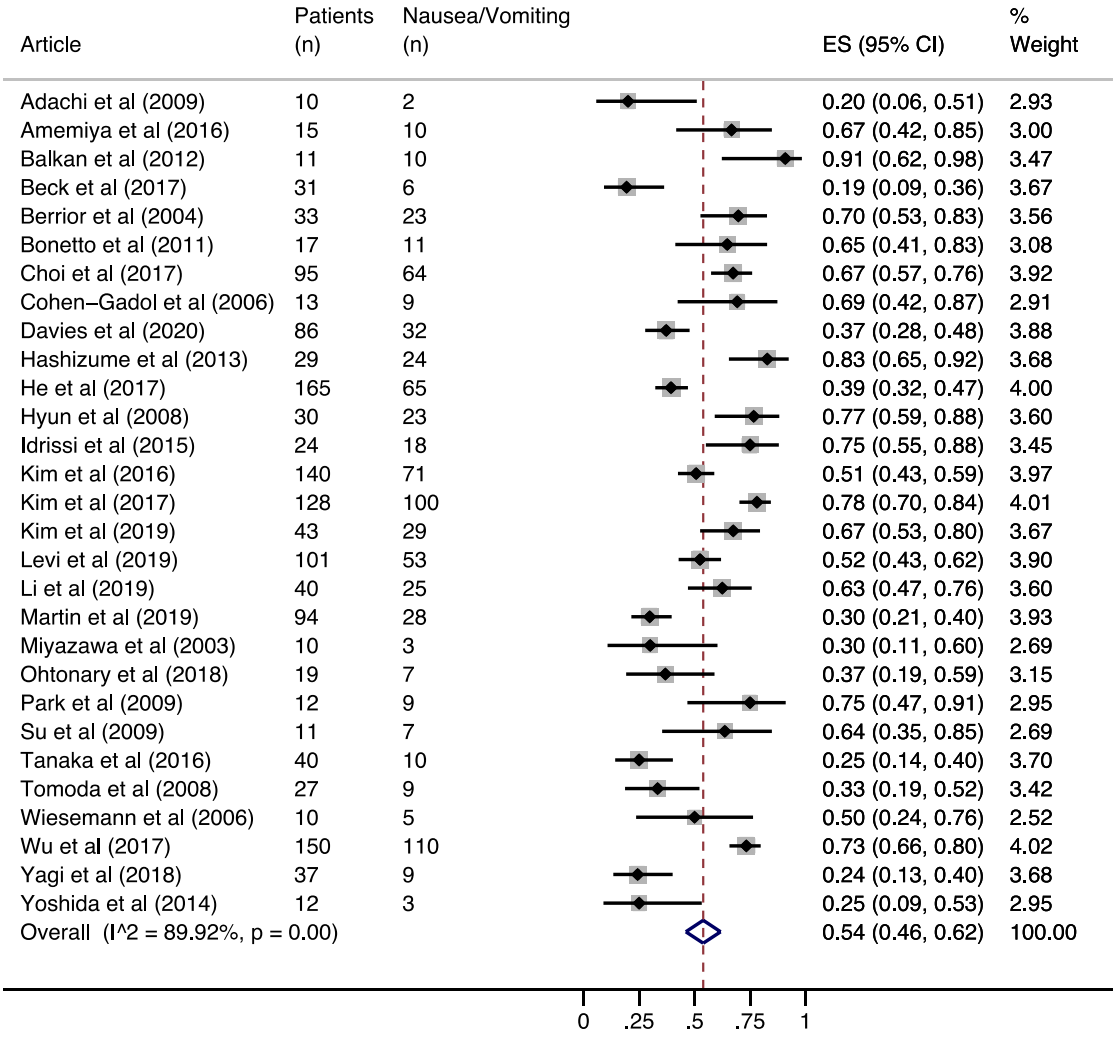

**eFigure 7d. Meta-analysis of proportions of headache location (fronto-occipital)**



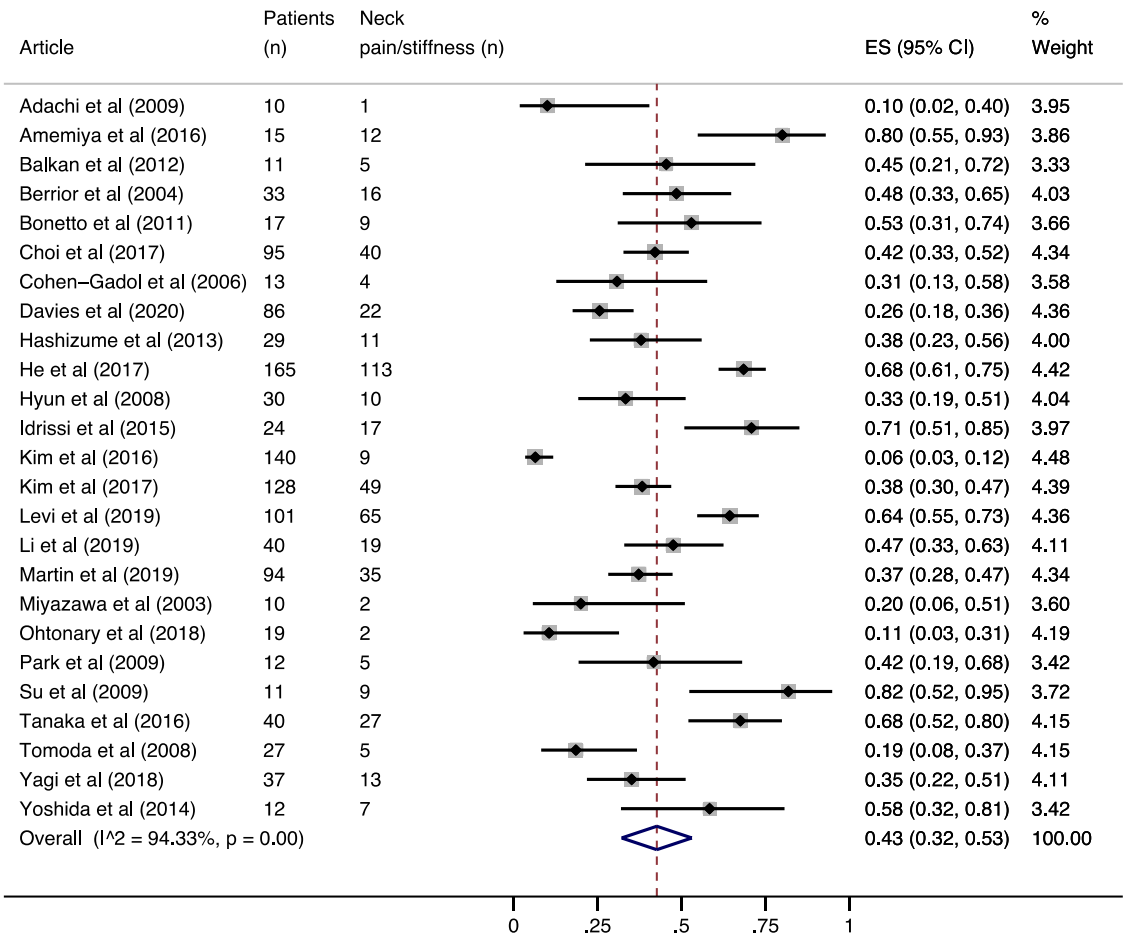
**eFigure 7e. Meta-analysis of proportions of headache location (temporal)**



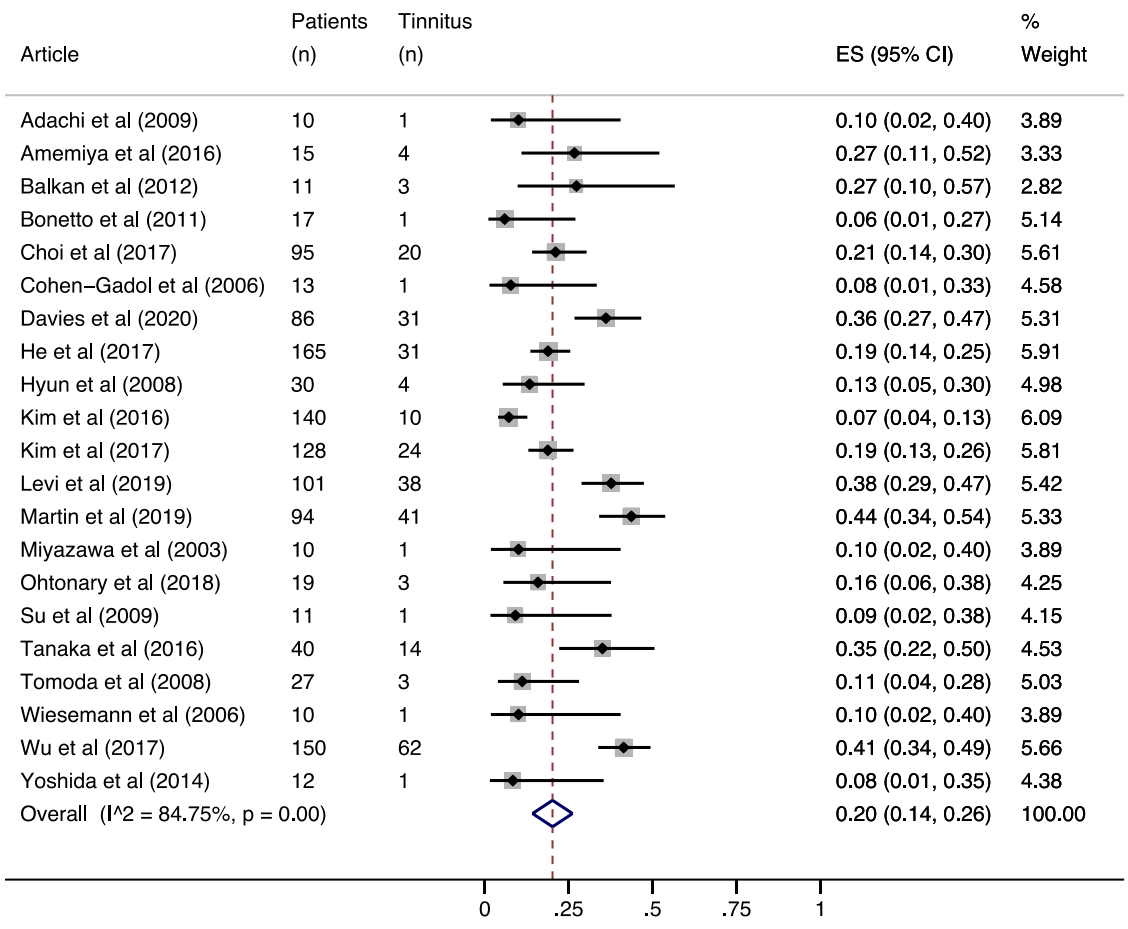
**eFigure 8a. Meta-analysis of proportions of patients with nausea/vomiting**



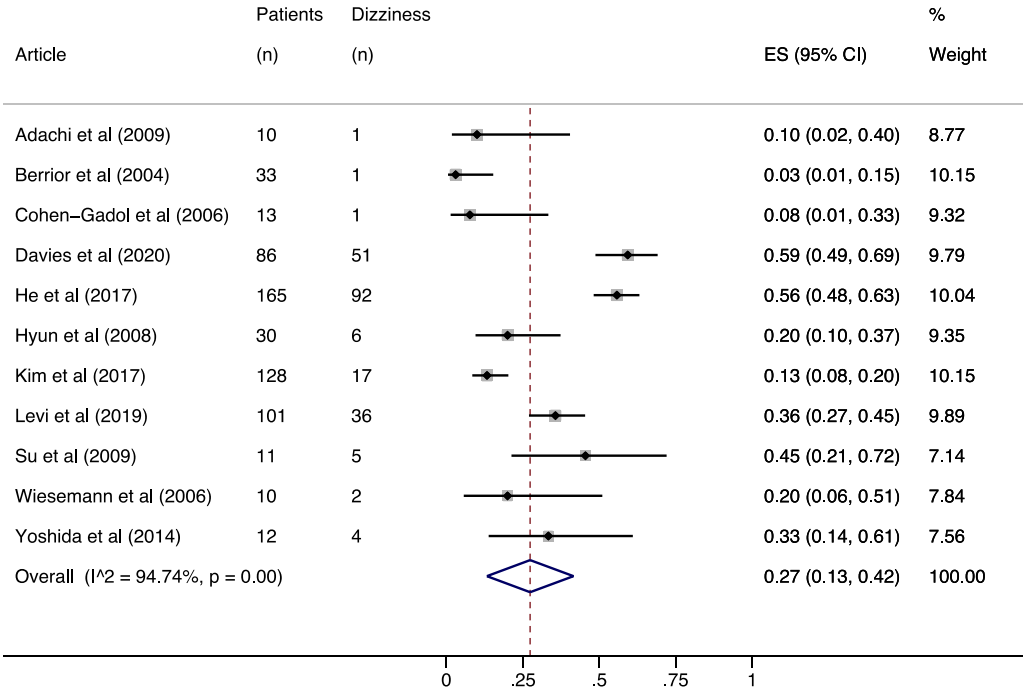
**eFigure 8b. Meta-analysis of proportions of patients with neck pain/stiffness**



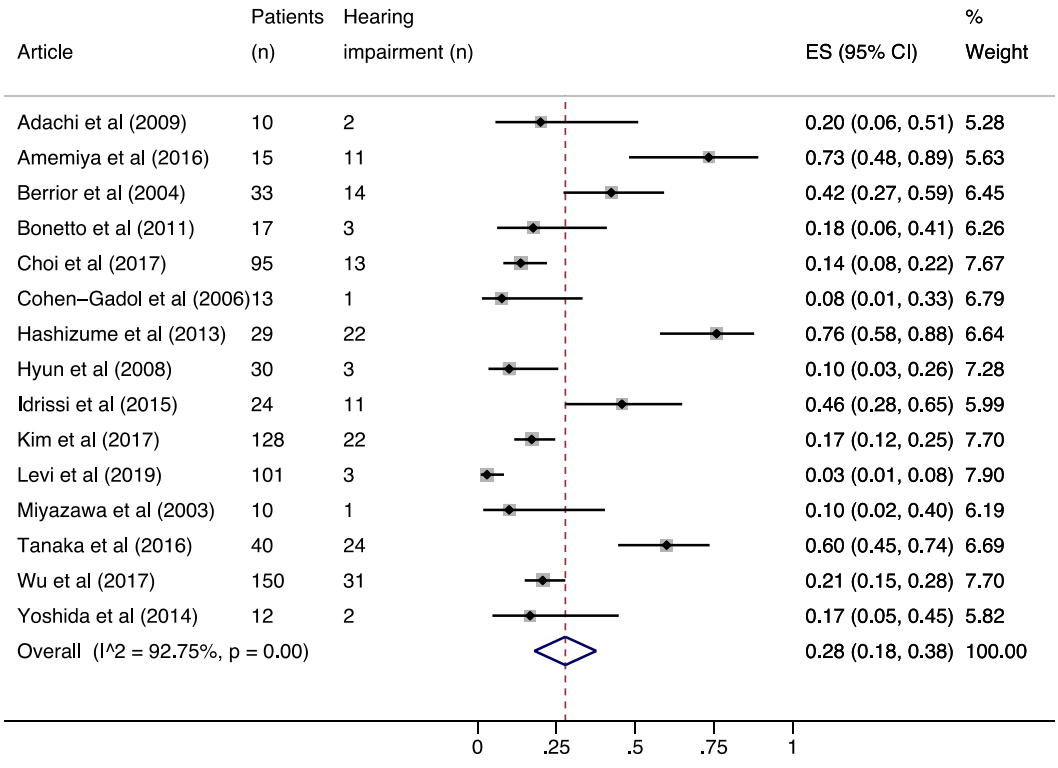
**eFigure 8c. Meta-analysis of proportions of patients with tinnitus**



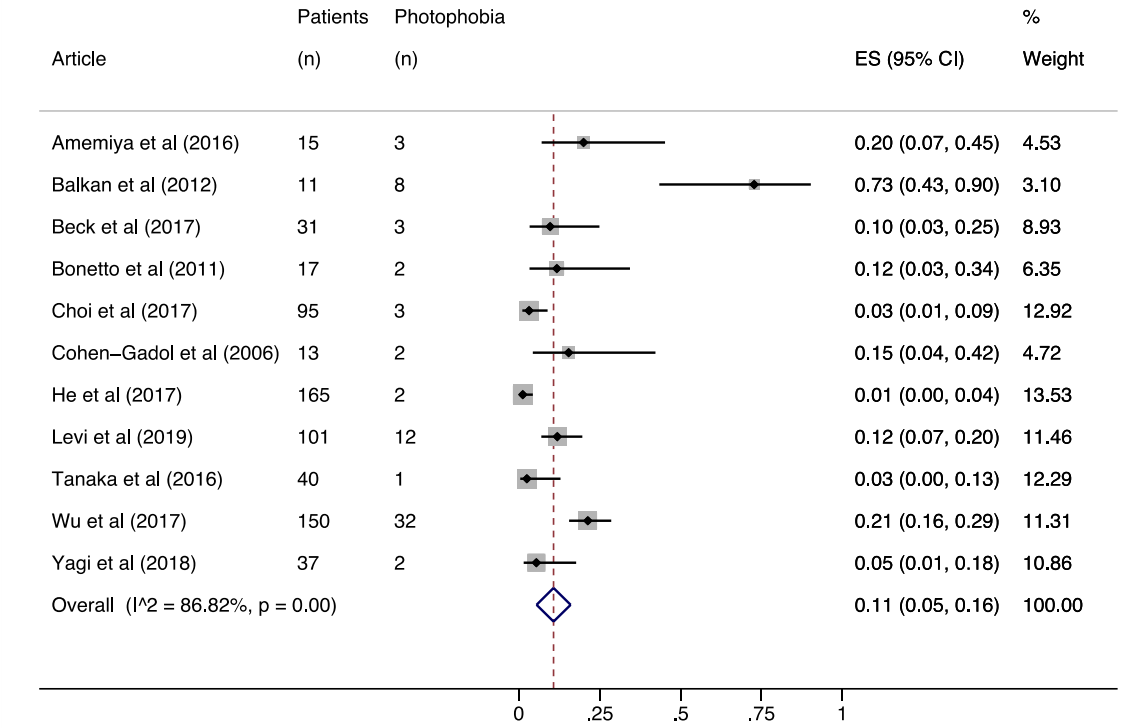
**eFigure 8d. Meta-analysis of proportions of patients with dizziness**



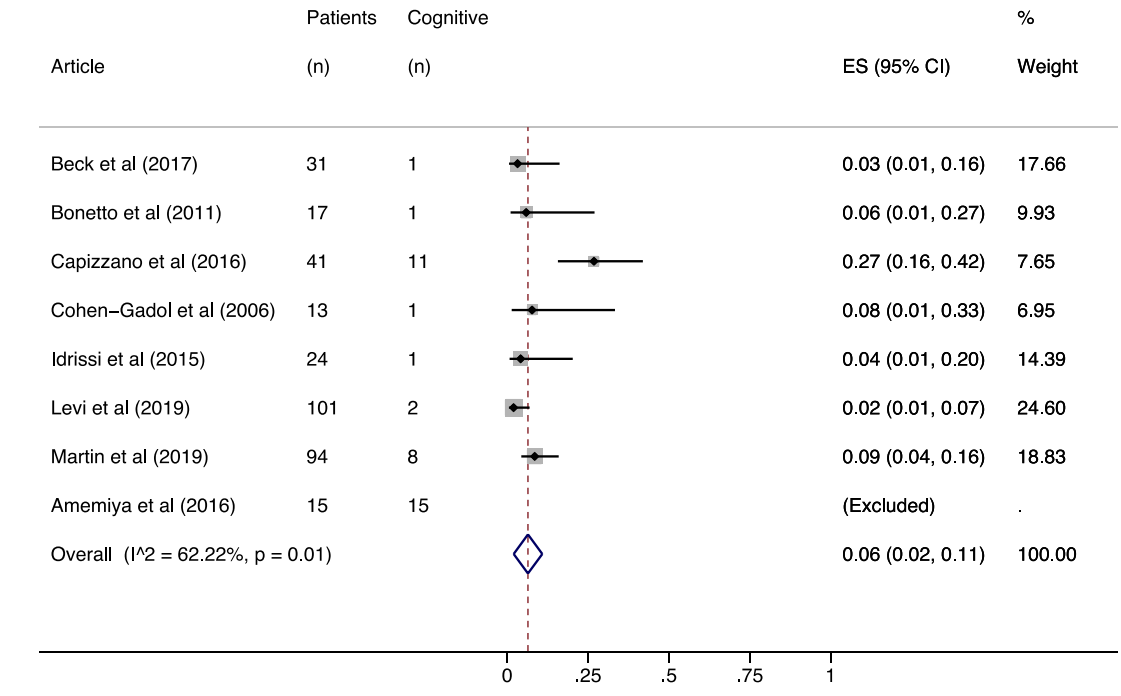

**eFigure 8e. Meta-analysis of proportions of patients with hearing disturbances**



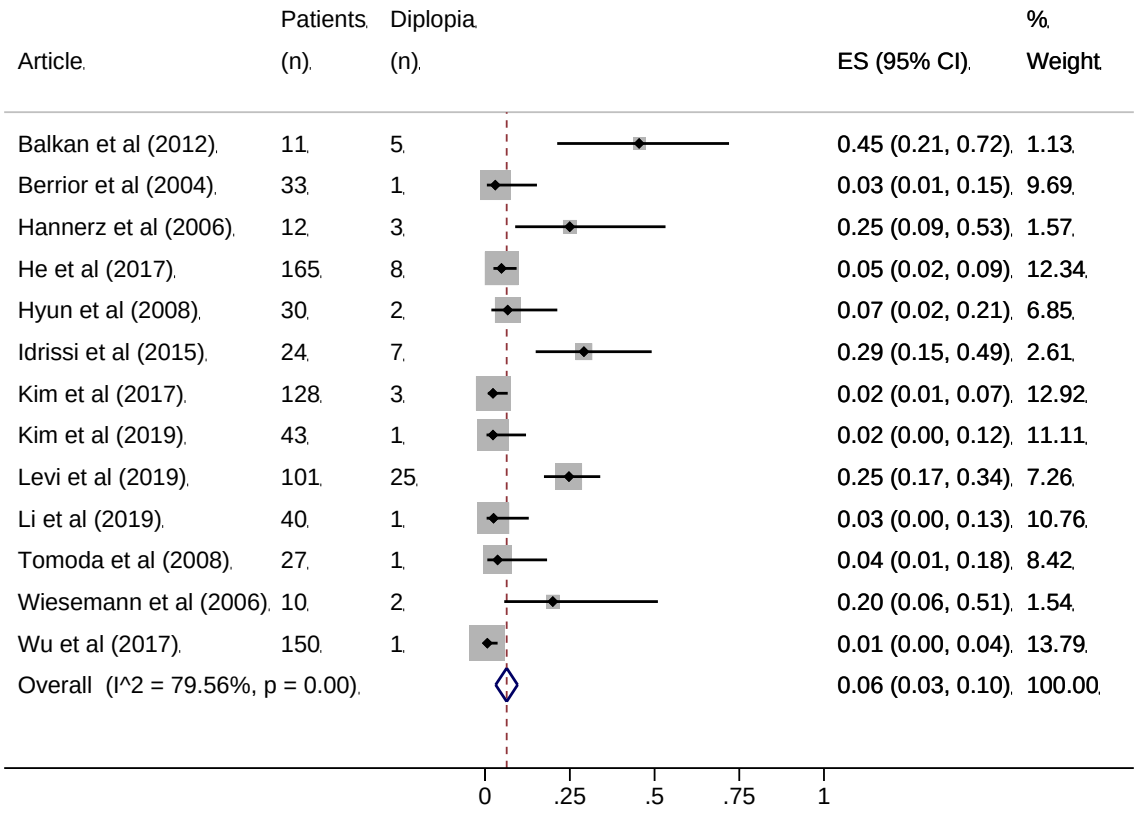
**eFigure 8f. Meta-analysis of proportions of patients with photophobia**



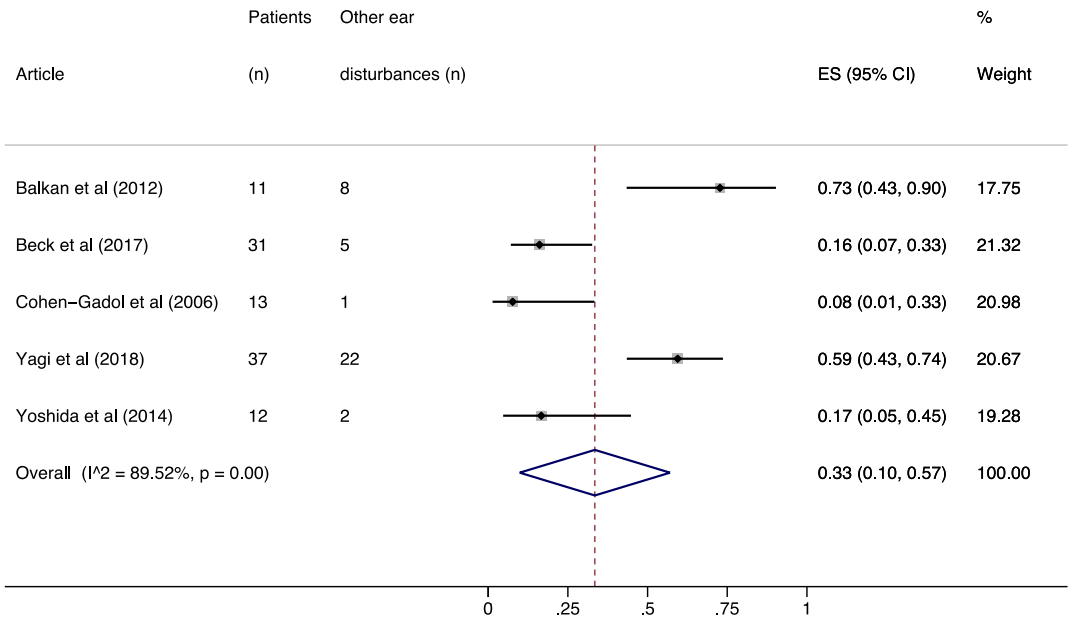

**eFigure 8g. Meta-analysis of proportions of patients with cognitive symptoms**



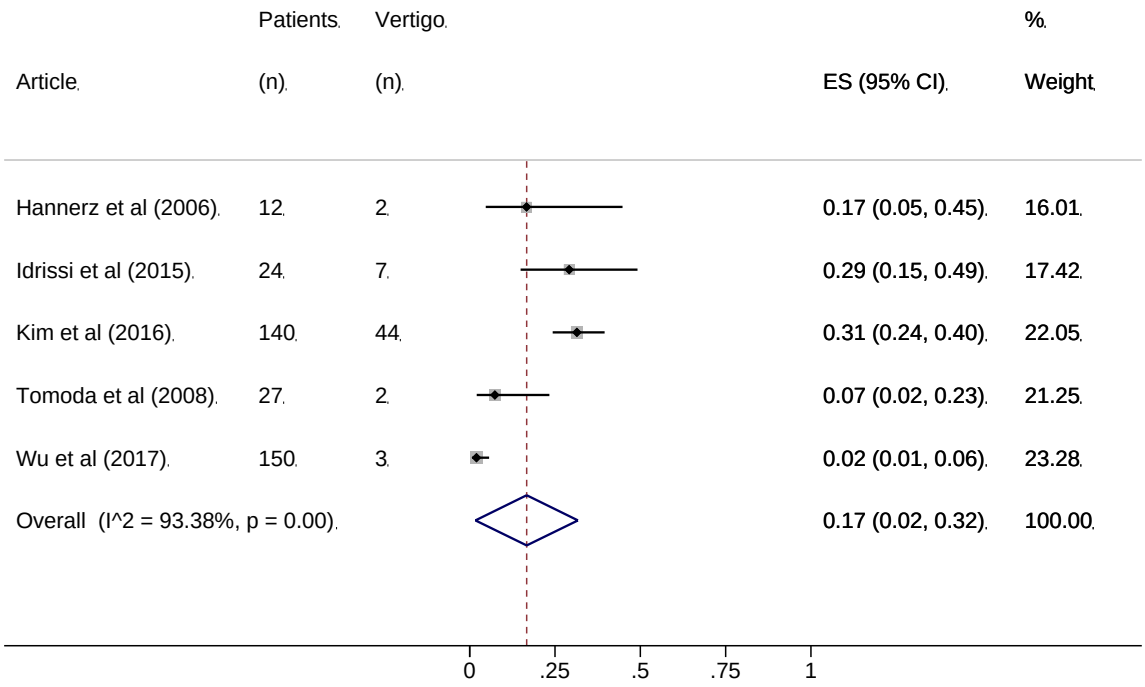
**eFigure 8h. Meta-analysis of proportions of patients with diplopia**



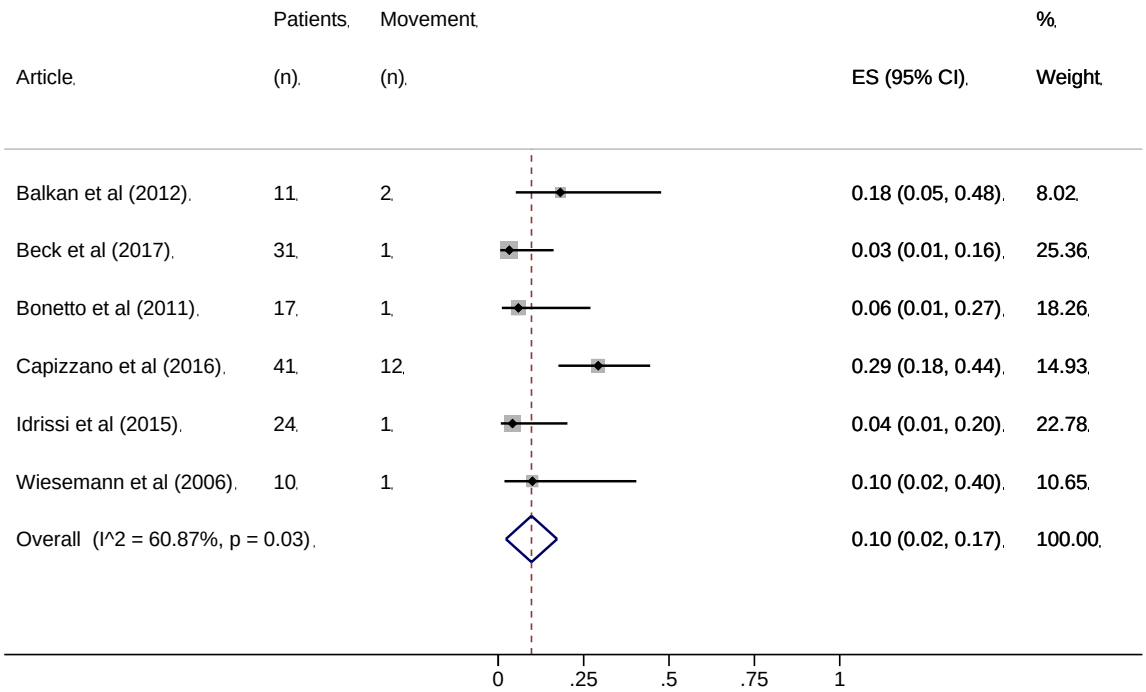

**eFigure 8i. Meta-analysis of proportions of patients with other ear-related symptoms**



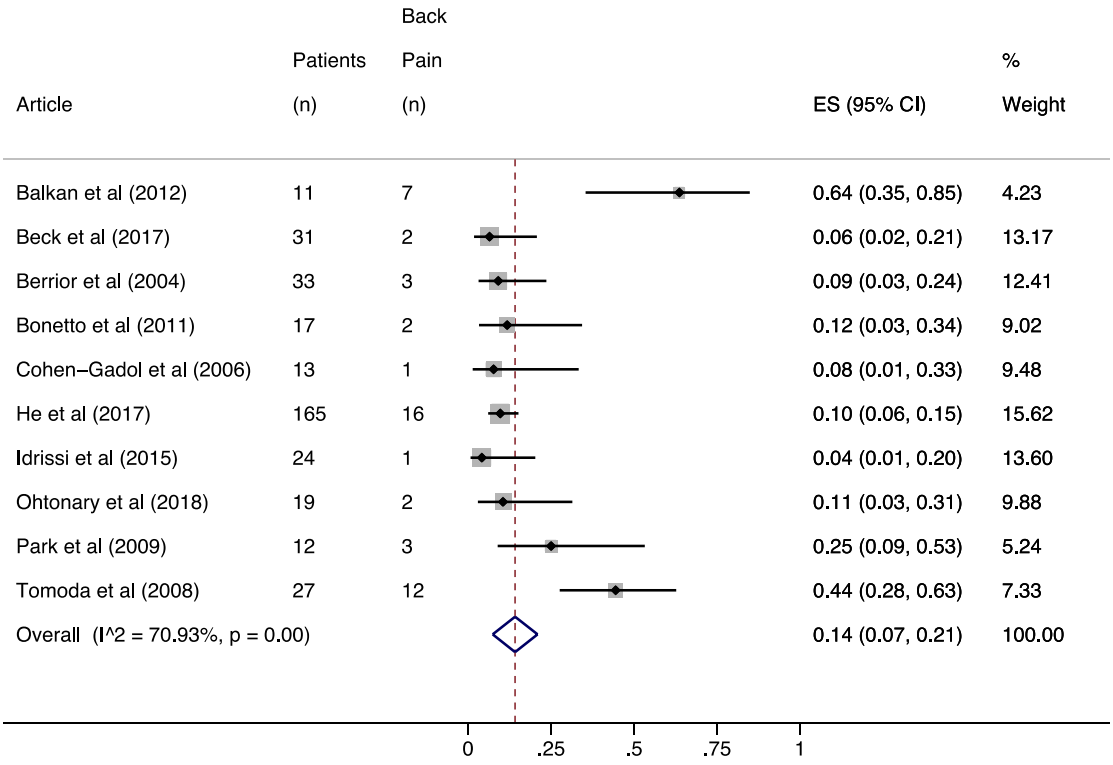
**eFigure 8l. Meta-analysis of proportions of patients with vertigo**



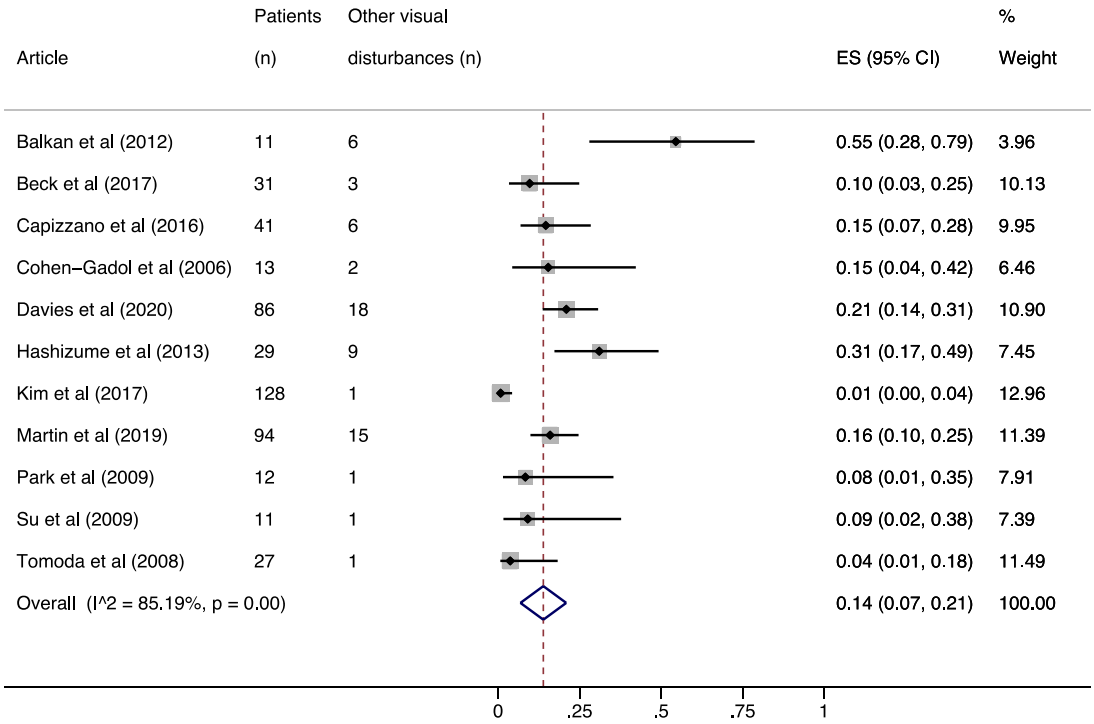

**eFigure 8m. Meta-analysis of proportions of patients with movement disorders**



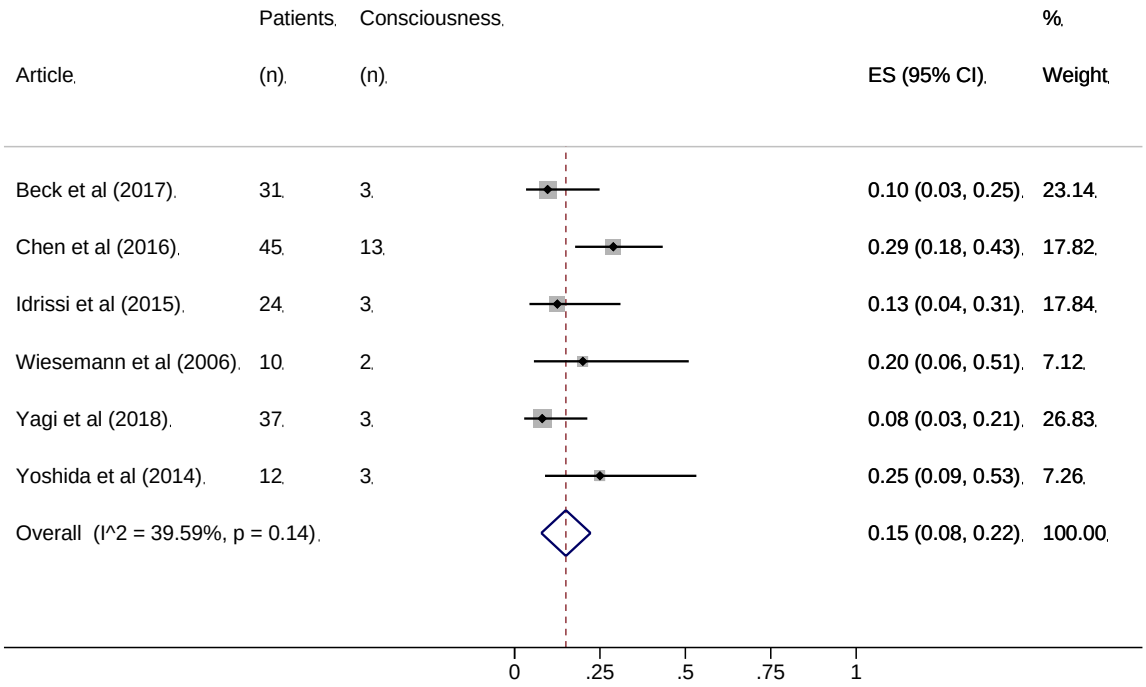
**eFigure 8n. Meta-analysis of proportions of patients with back pain**



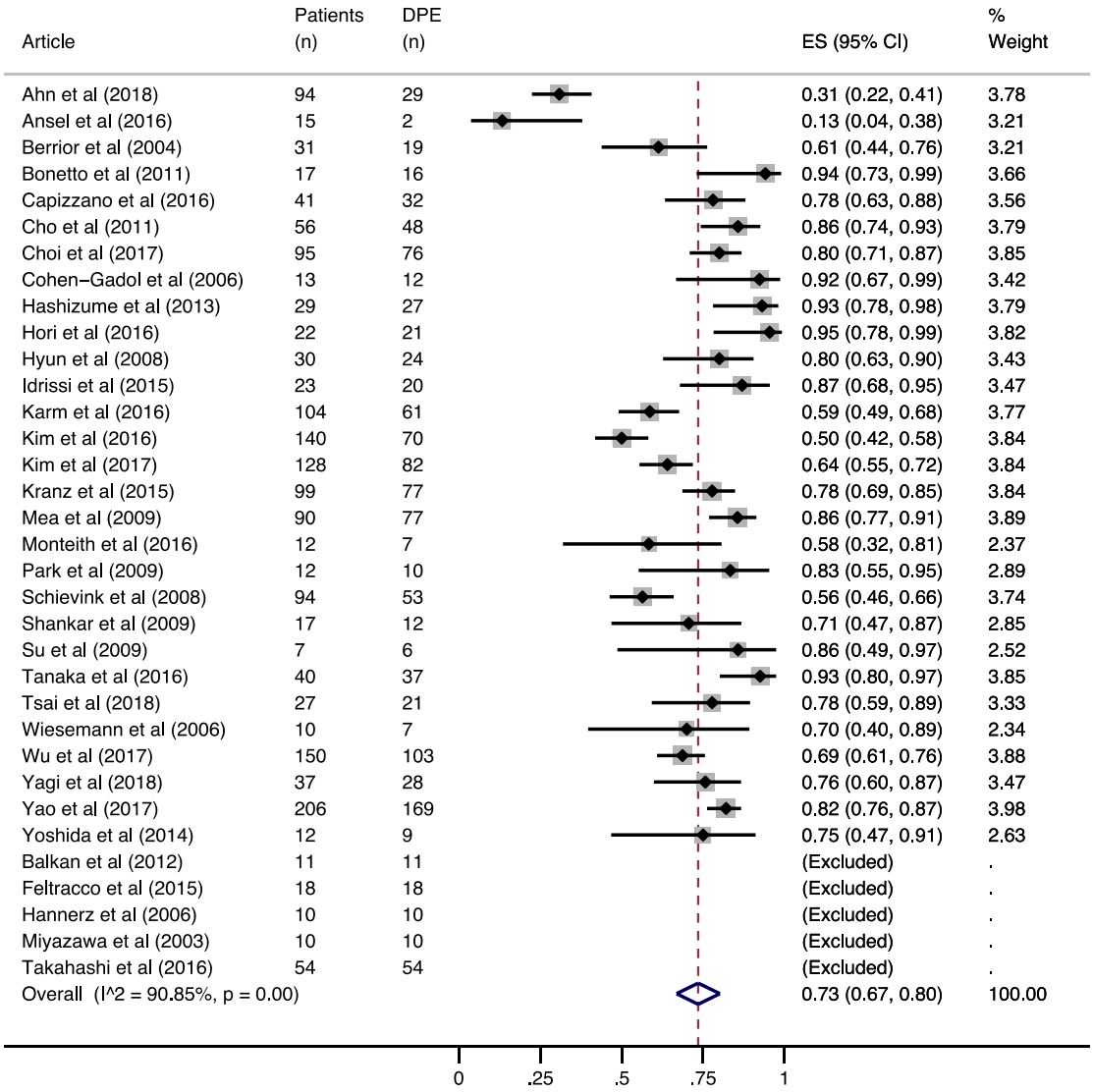

**eFigure 8o. Meta-analysis of proportions of patients with other visual symptoms**



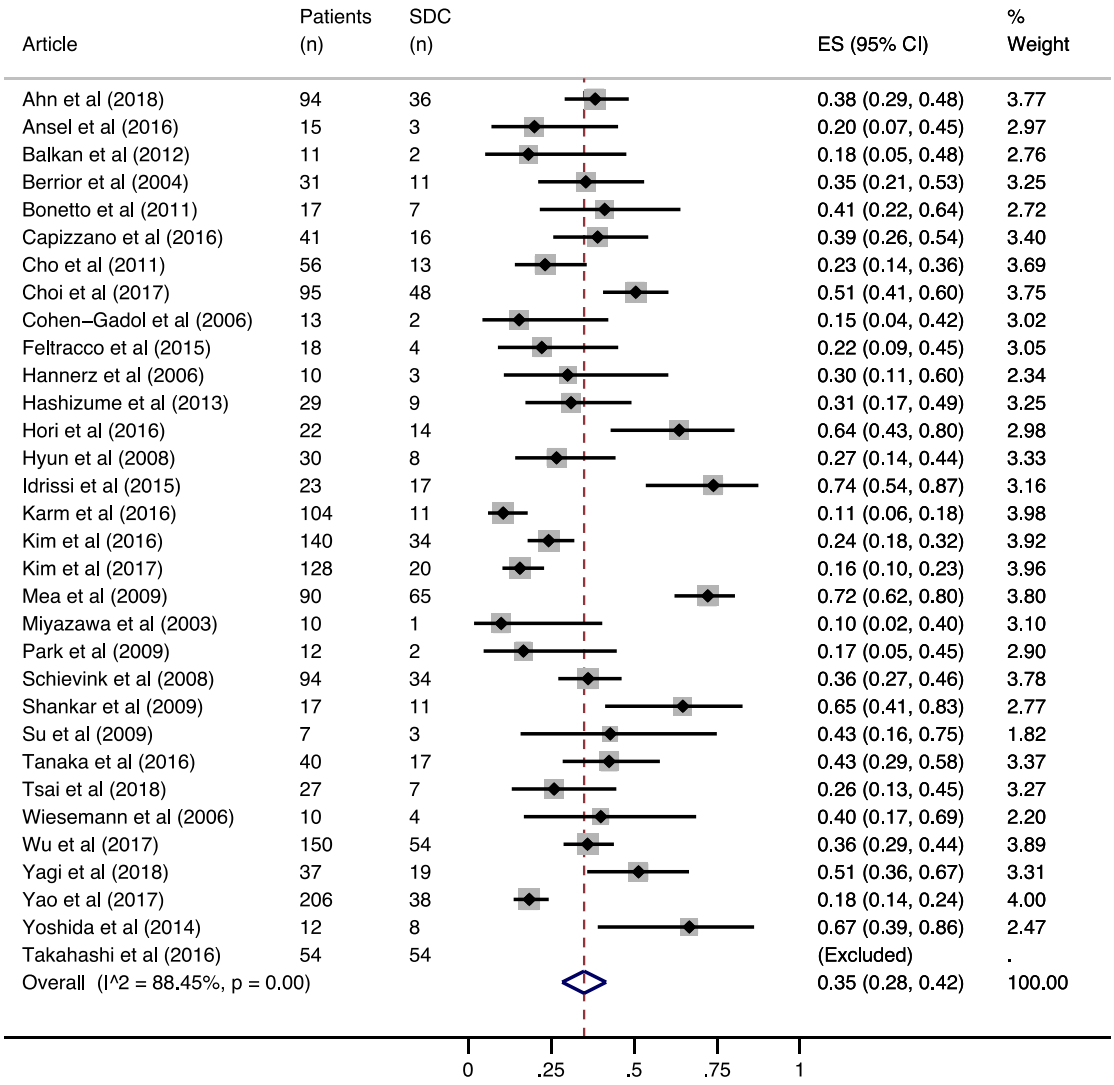
**eFigure 8p. Meta-analysis of proportions of patients with reduced consciousness**



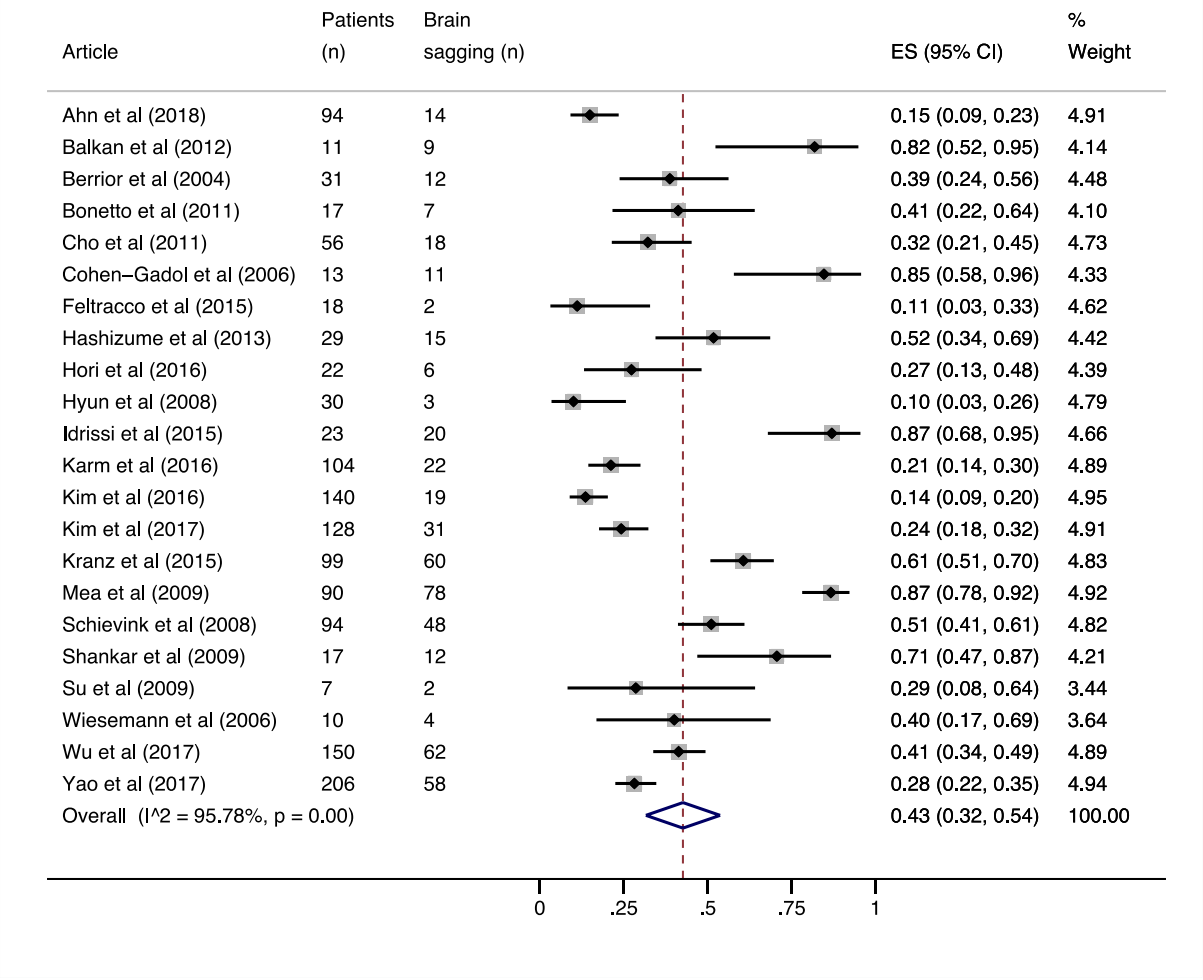
**eFigure 9a. Meta-analysis of proportions of diffuse pachymeningeal enhancement (DPE) in brain MRI**



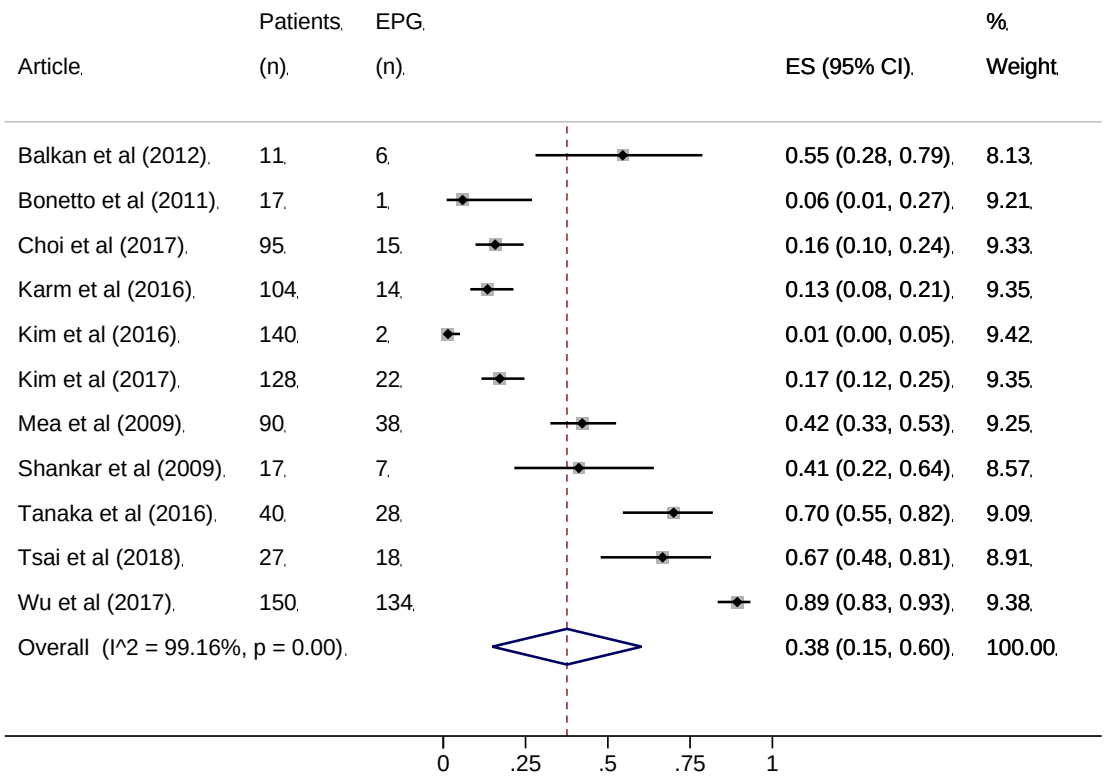
**eFigure 9b. Meta-analysis of proportions of subdural collections (SDC) in brain MRI**



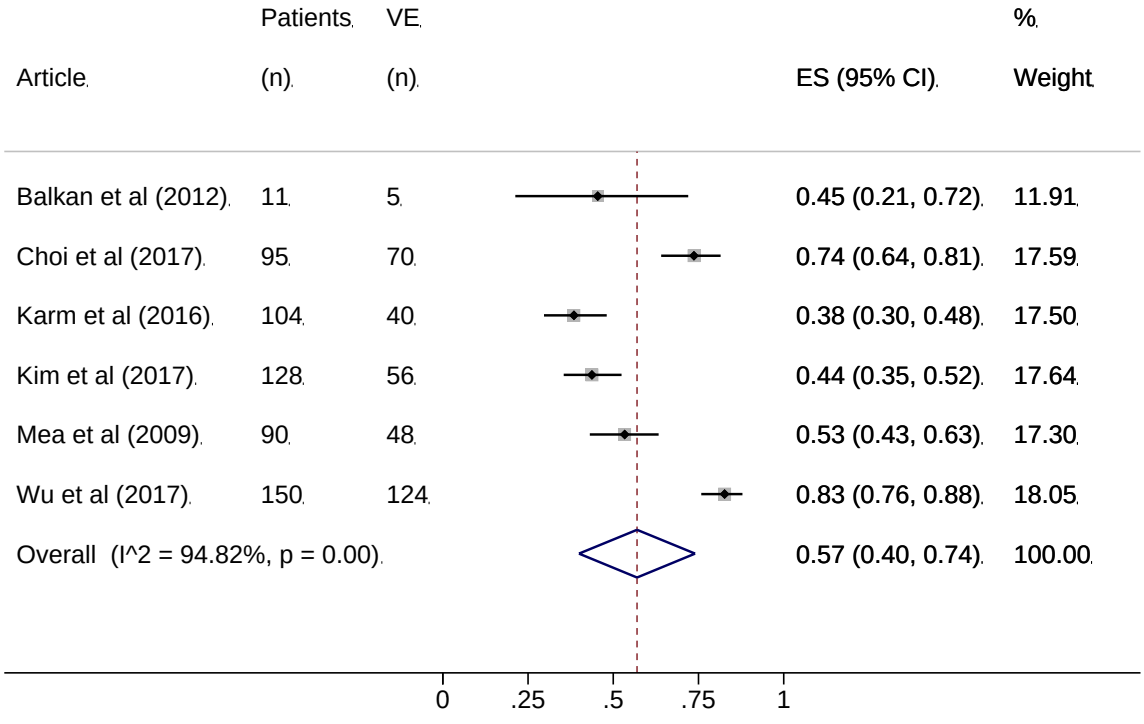
**eFigure 9c. Meta-analysis of proportions of brain sagging brain MRI**



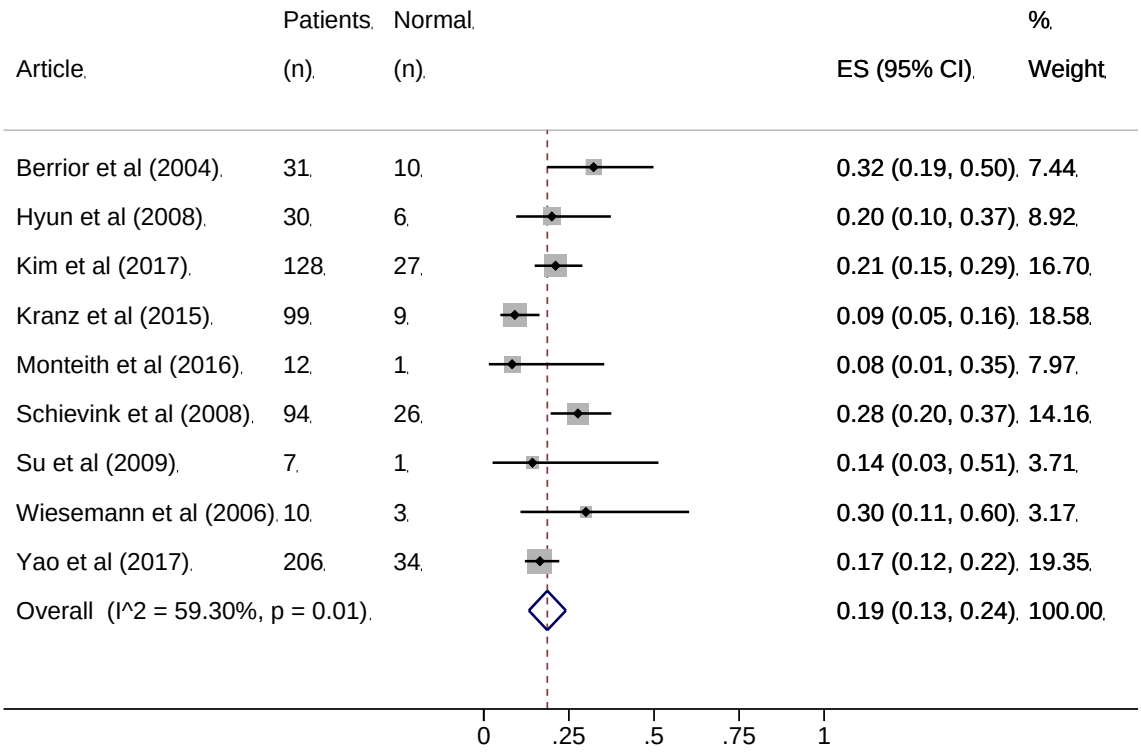
**eFigure 9d. Meta-analysis of proportions of enlarged pituitary gland (EPG) in brain MRI**



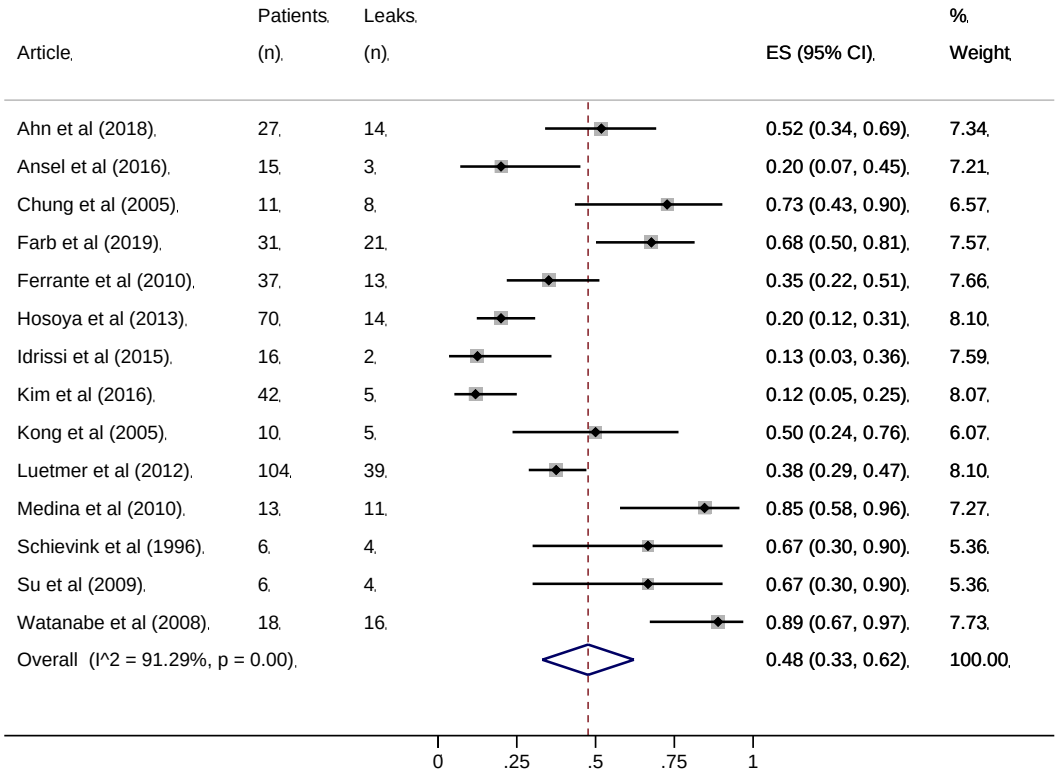

**eFigure 9e. Meta-analysis of proportions of venous engorgement in brain MRI**



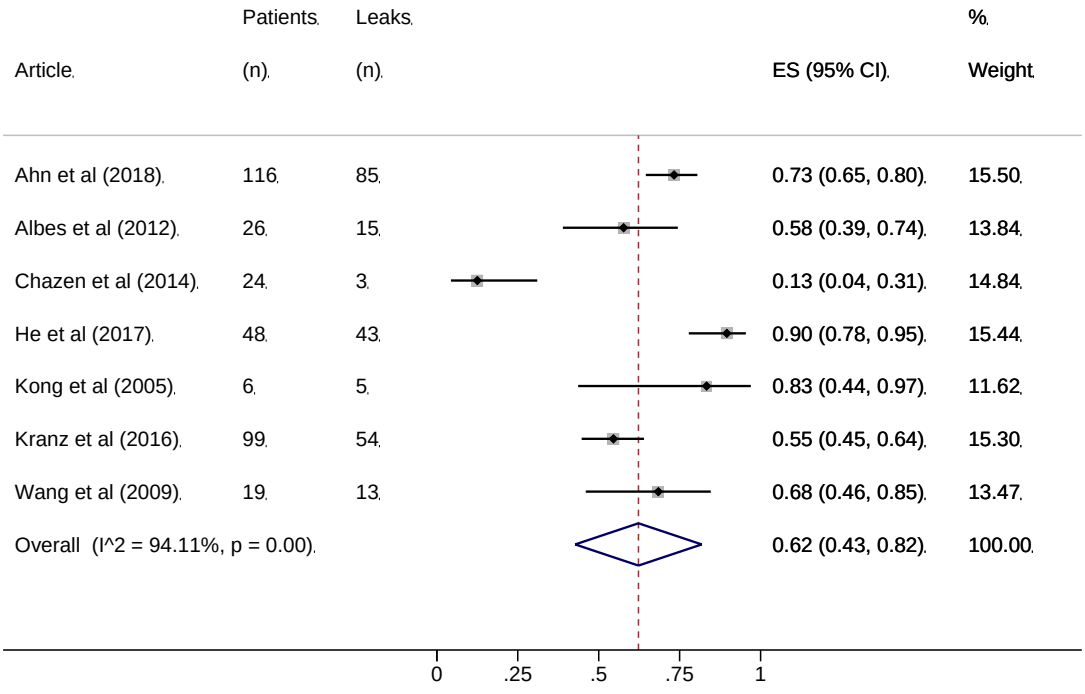
**eFigure 9f. Meta-analysis of proportions of normal brain MRI**



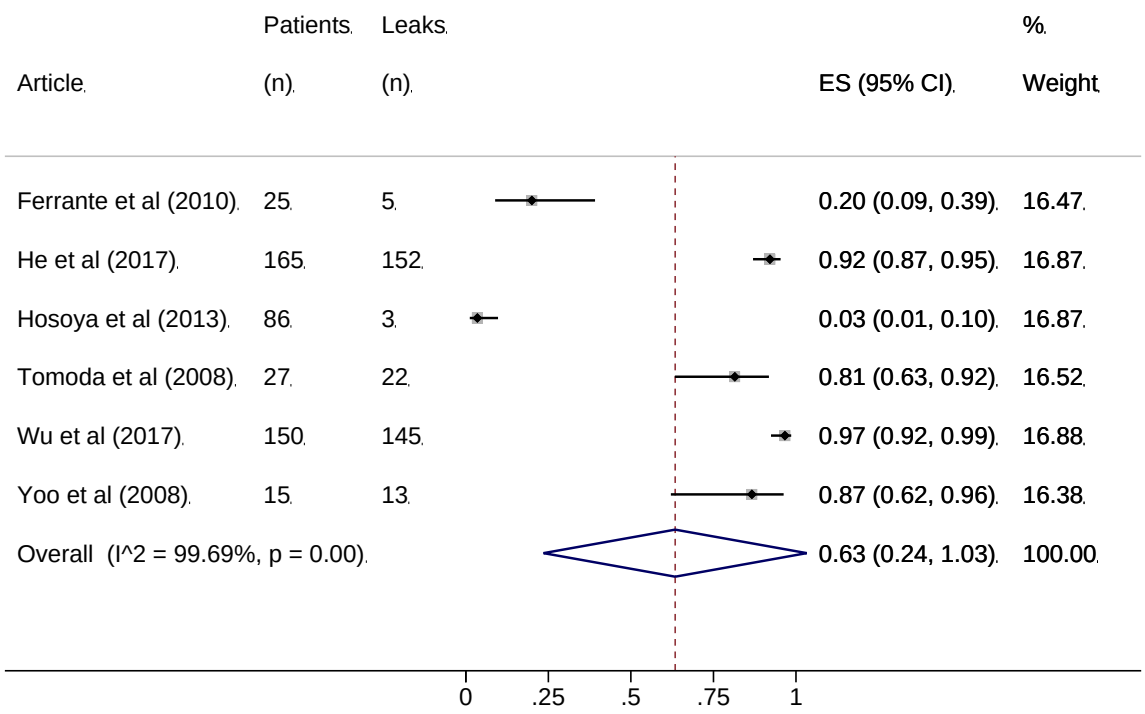
**eFigure 10. Meta-analysis of proportions of positive findings in spinal MRI**



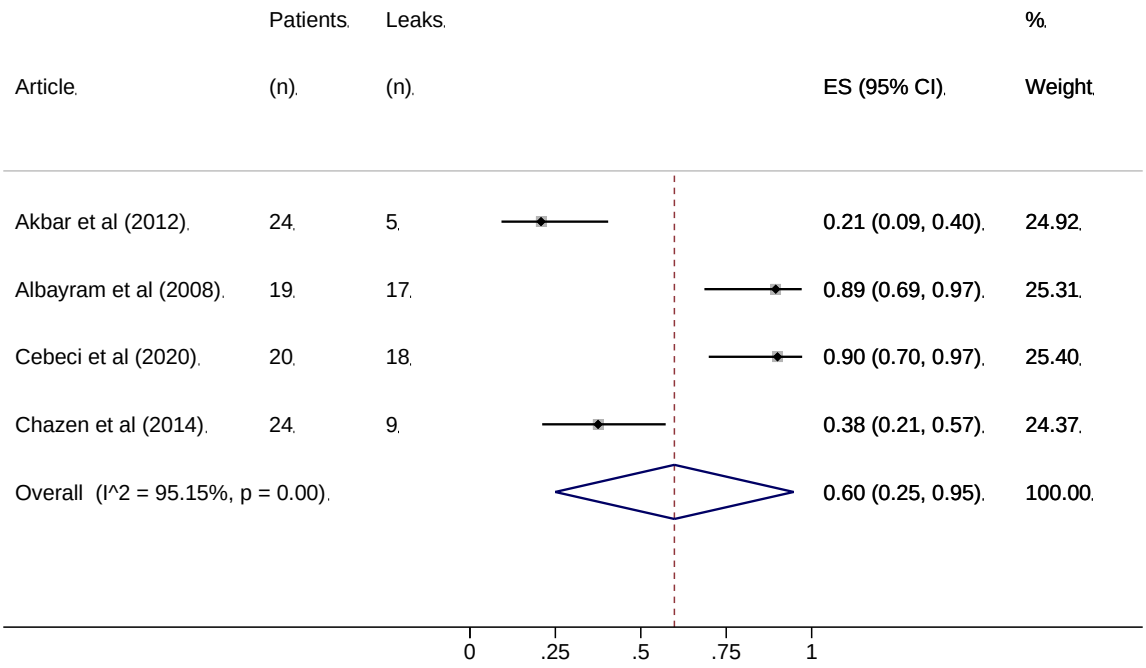

**eFigure 11. Meta-analysis of proportions of positive findings in CT myelography (CTM)**



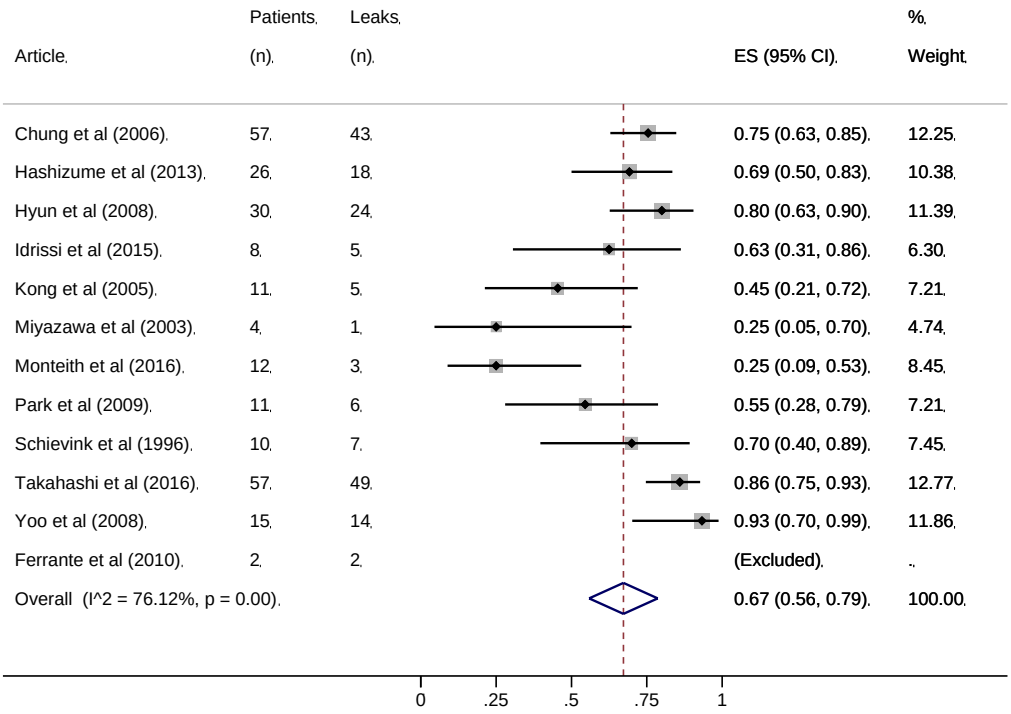
**eFigure 12. Meta-analysis of proportions of positive findings in MR myelography**



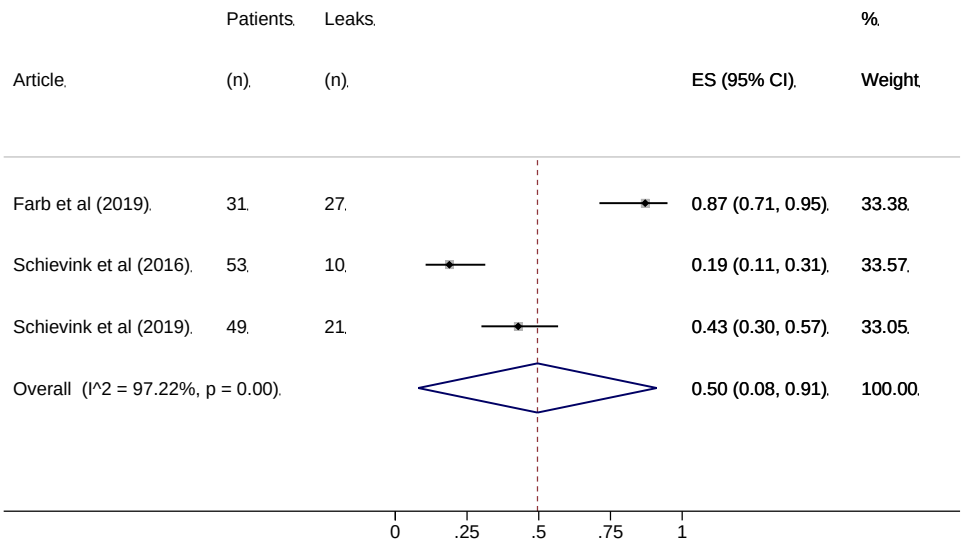

**eFigure 13. Meta-analysis of proportions of positive findings in MR myelography with intrathecal gadolinium**



**eFigure 14. Meta-analysis of proportions of positive findings in radionuclide cisternography**

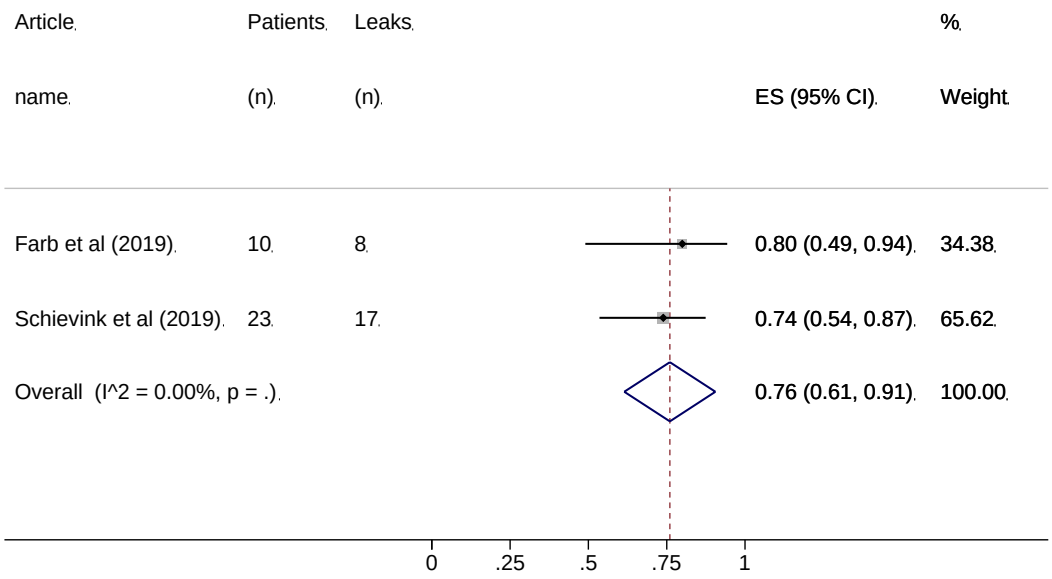



**eFigure 15. Meta-analysis of proportions of positive findings in digital subtraction myelography**

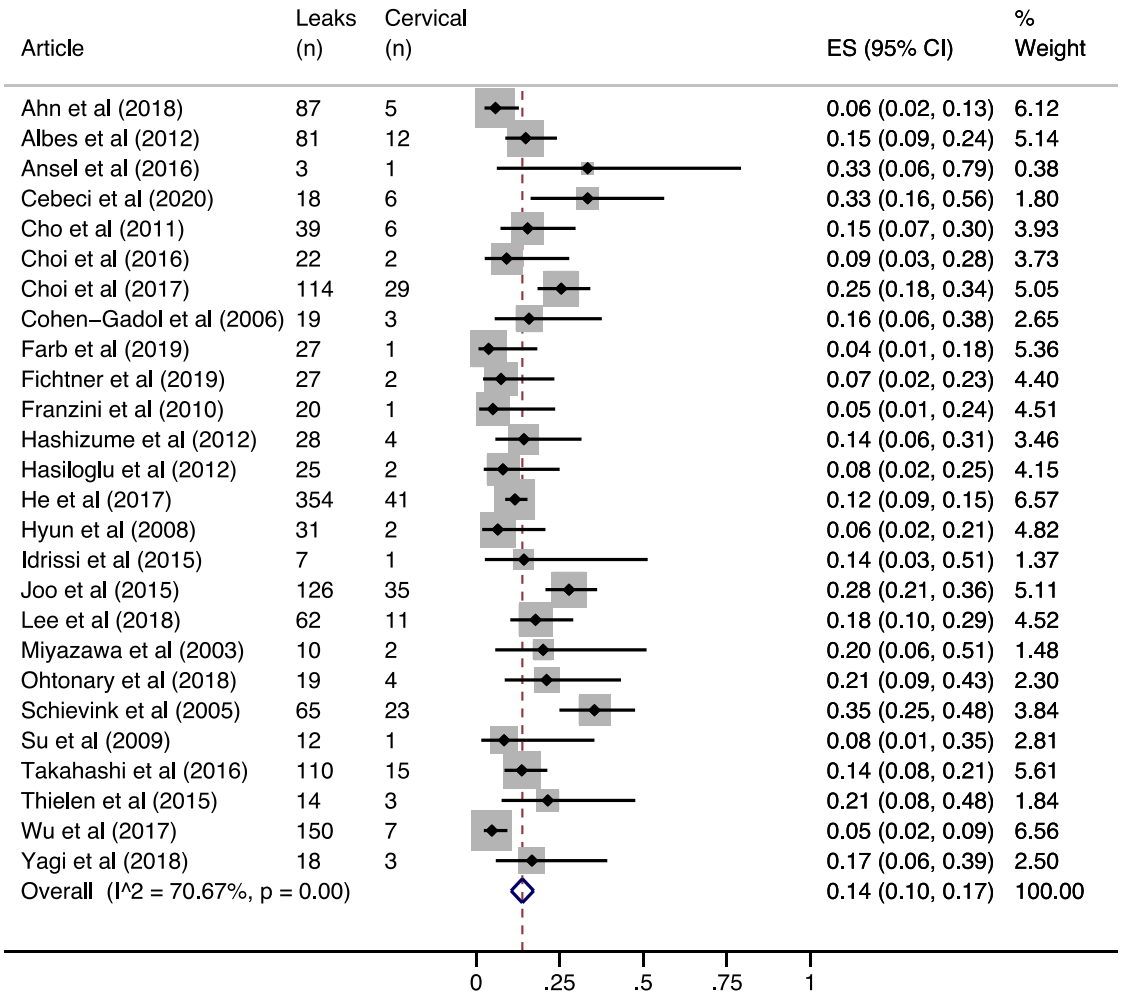



The two studies by Schievink *et al.* have clearly been reported to come from different groups of patients, therefore, they were both eligible for the meta-analysis.

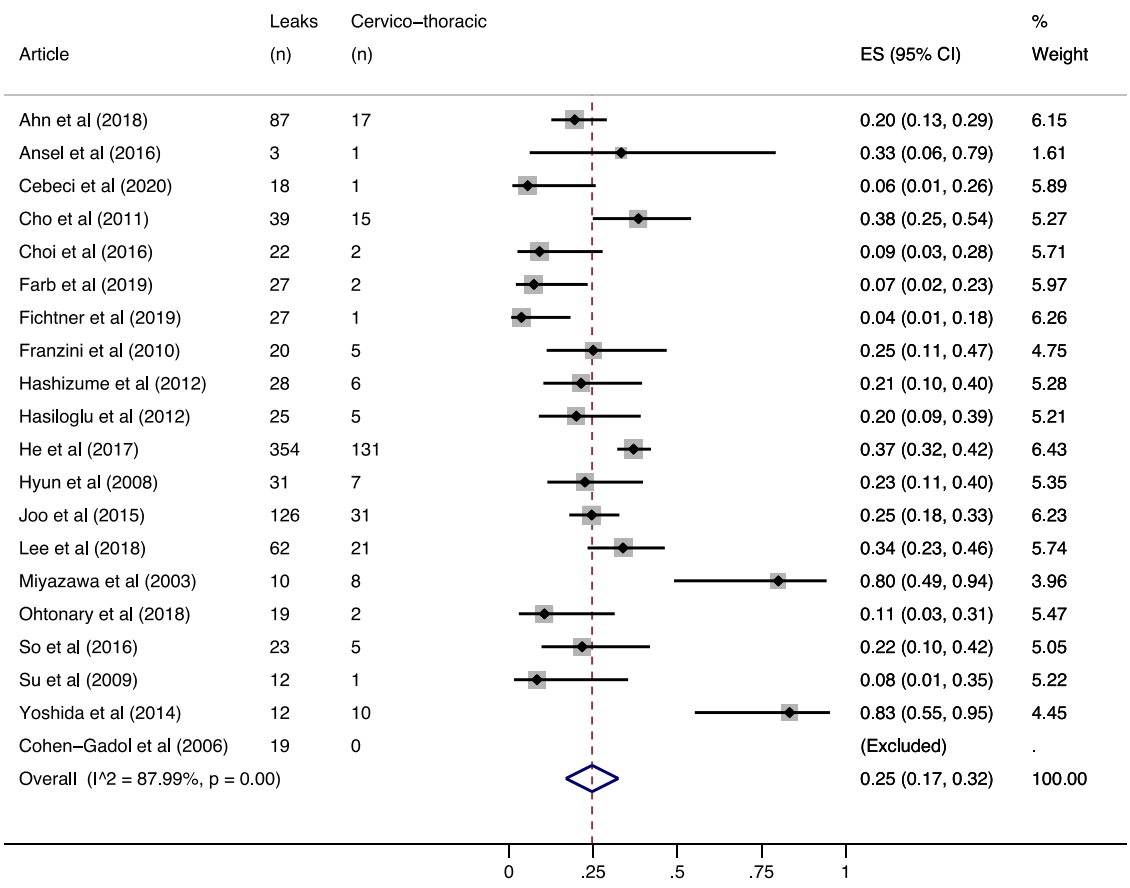
**eFigure 16. Meta-analysis of proportions of positive findings in digital subtraction myelography performed in lateral decubitus position**



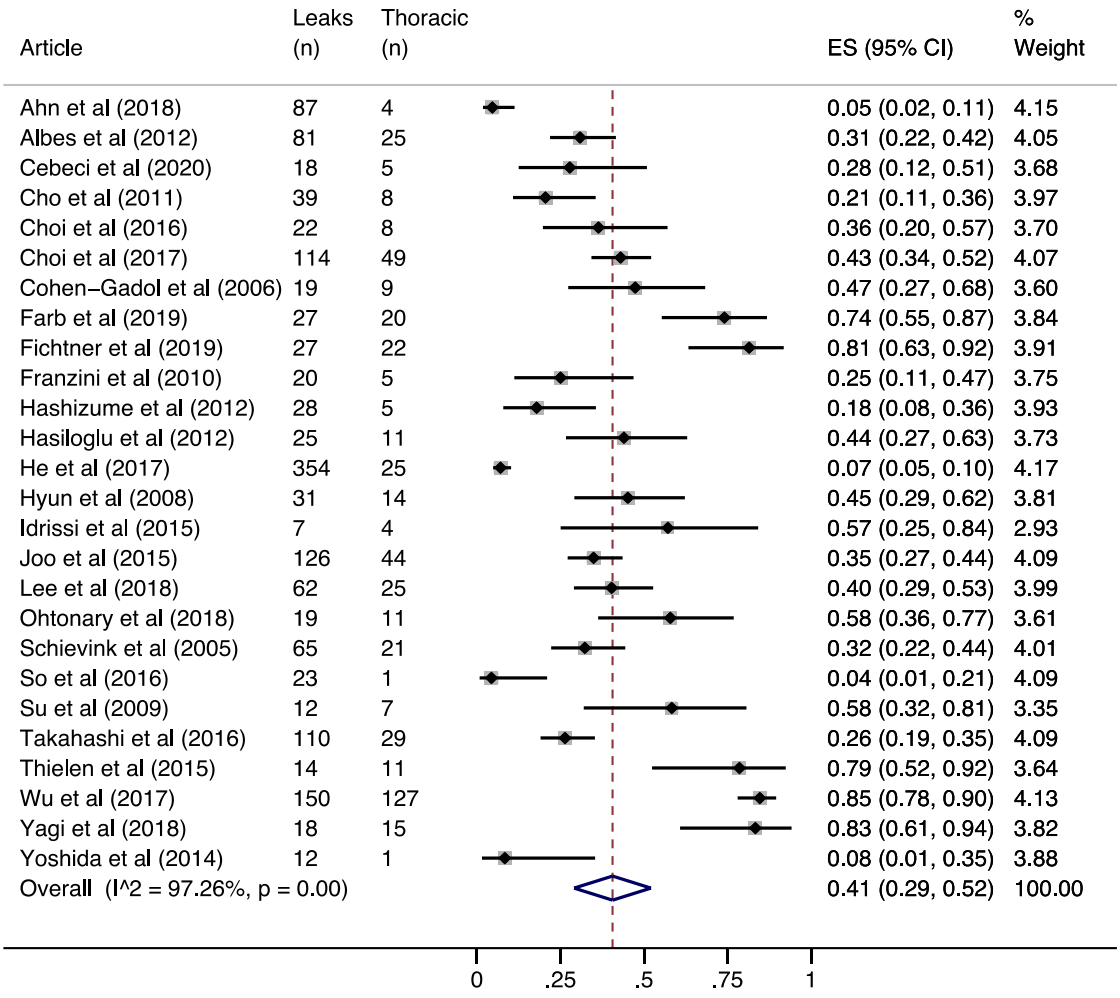
**eFigure 17a. Meta-analysis of proportions of leak location (cervical)**



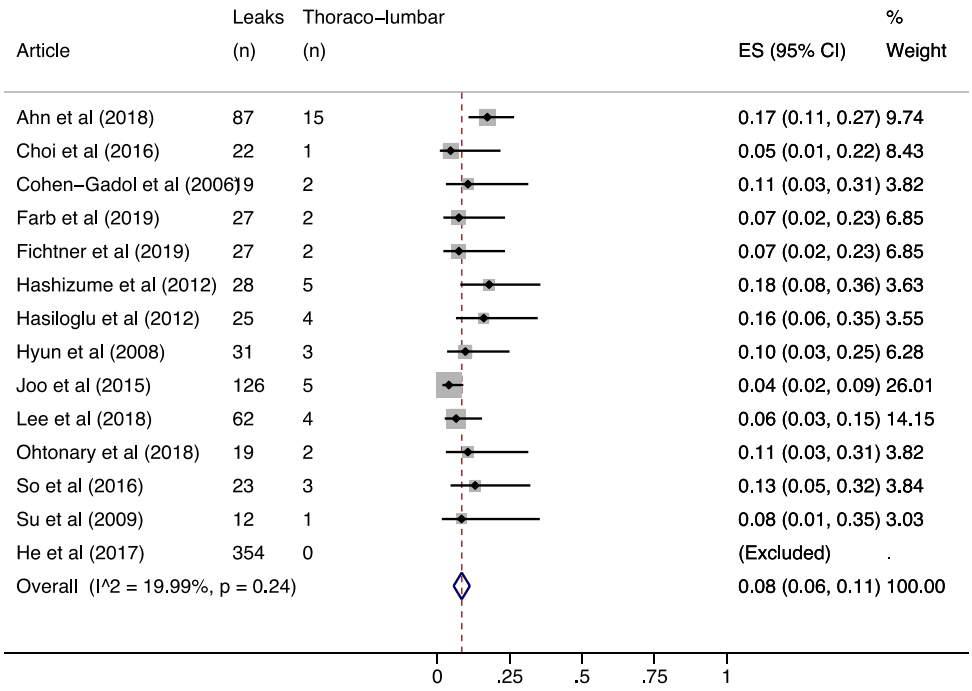
**eFigure 17b. Meta-analysis of proportions of leak location (cervico-thoracic)**



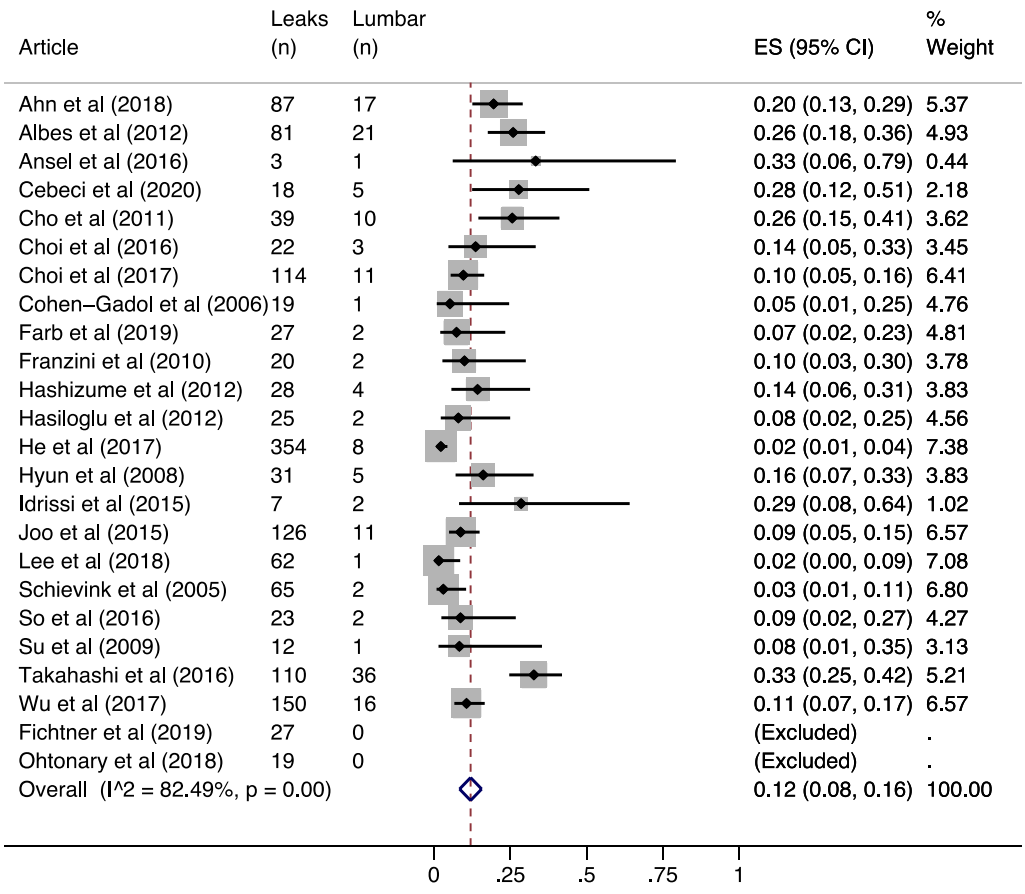
**eFigure 17c. Meta-analysis of proportions of leak location (thoracic)**



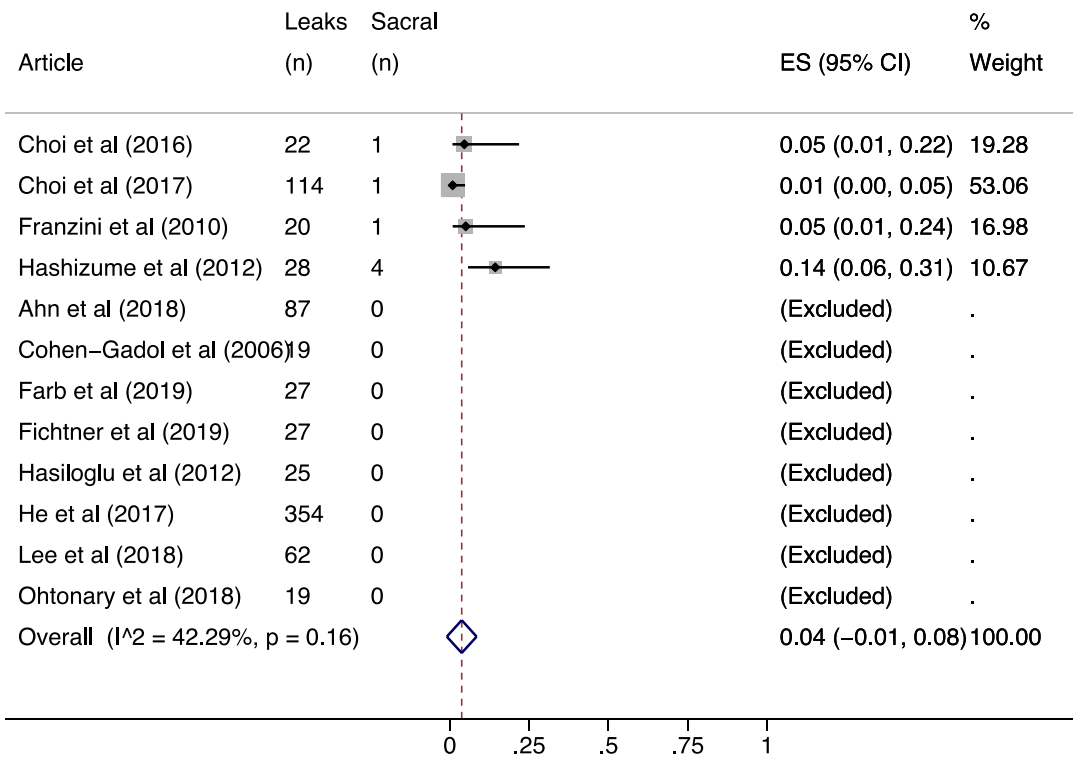
**eFigure 17d. Meta-analysis of proportions of leak location (thoraco-lumbar)**



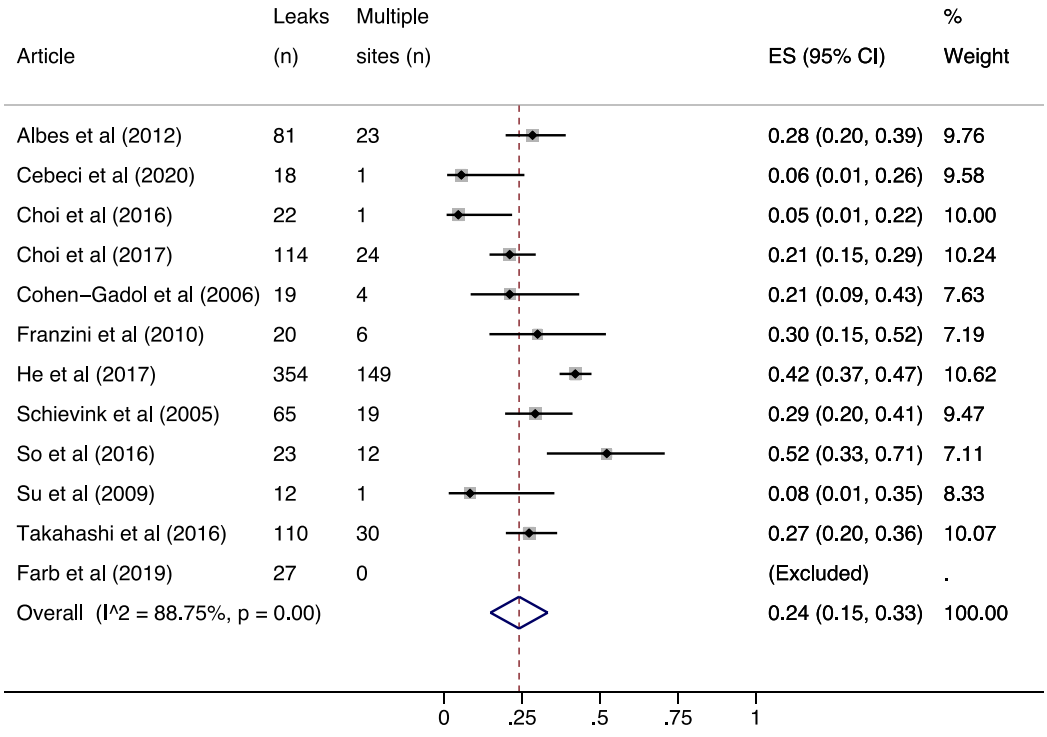

**eFigure 17e. Meta-analysis of proportions of leak location (lumbar)**



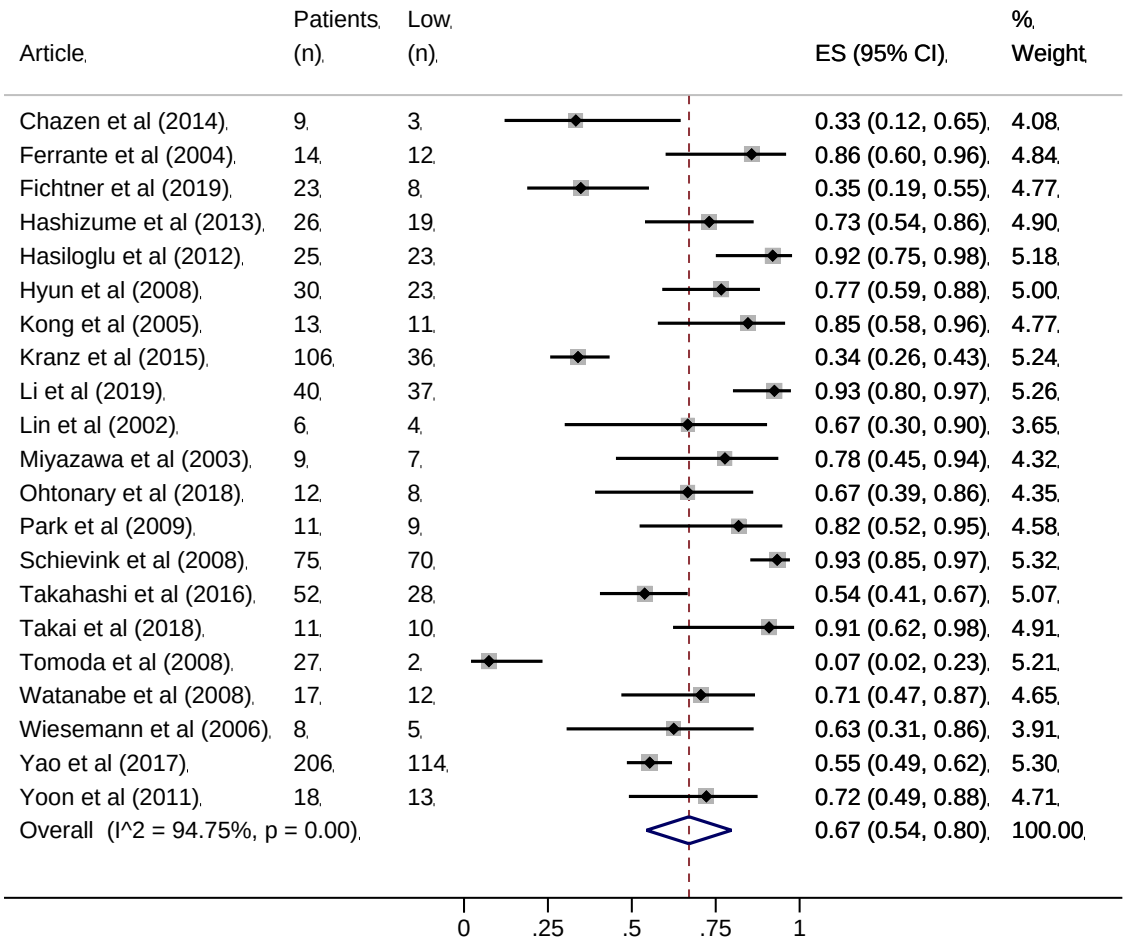
**eFigure 17f. Meta-analysis of proportions of leak location (sacral)**



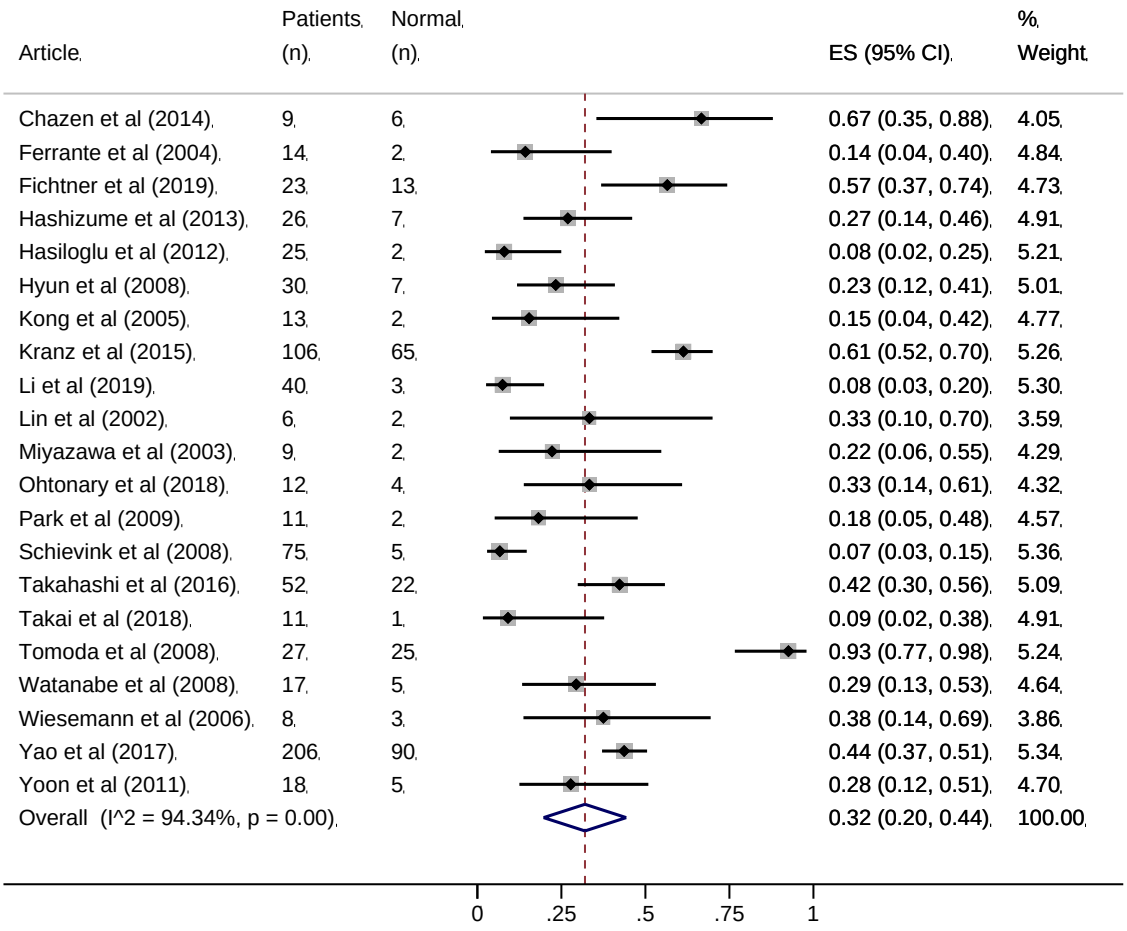

**eFigure 17g. Meta-analysis of proportions of leak location (multiple)**



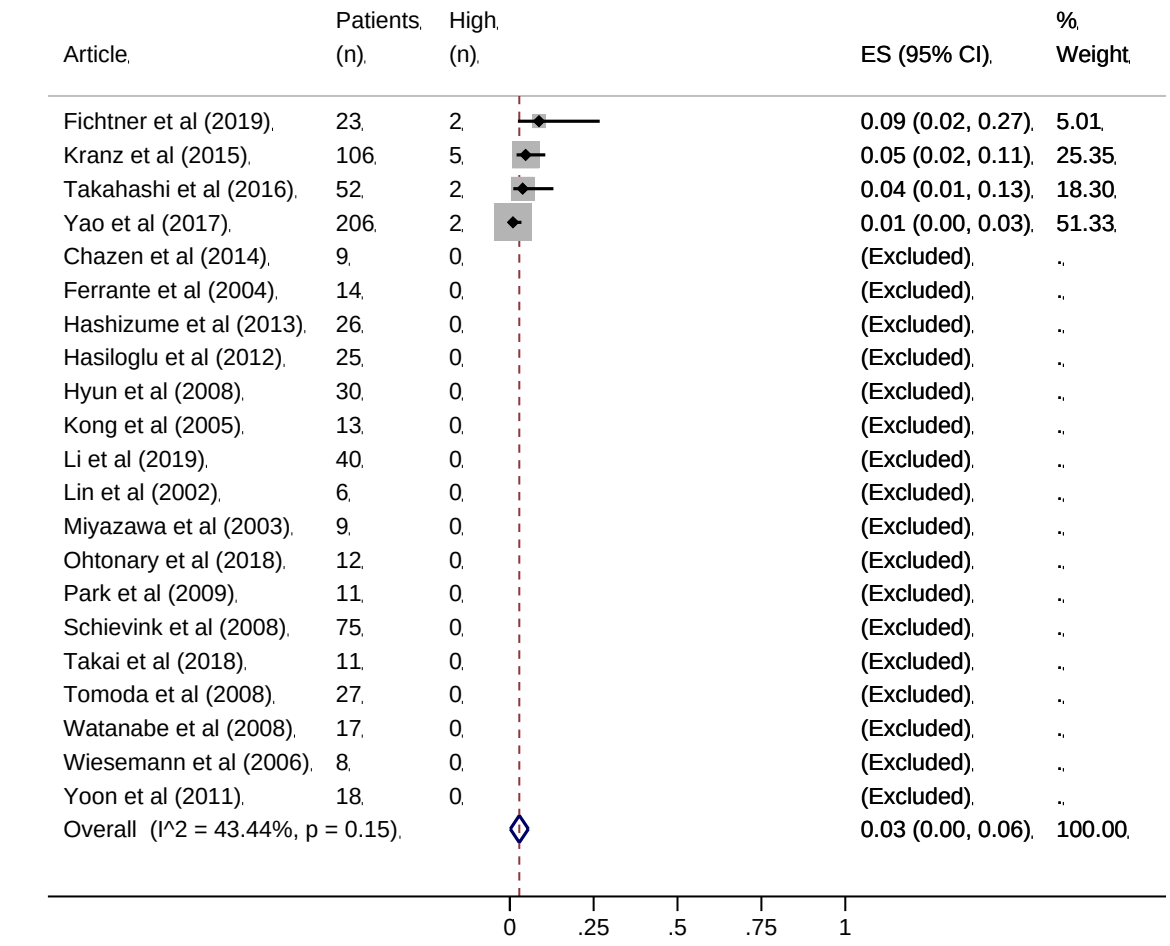
**eFigure 18a. Meta-analysis of proportions of lumbar puncture opening pressure (low)**



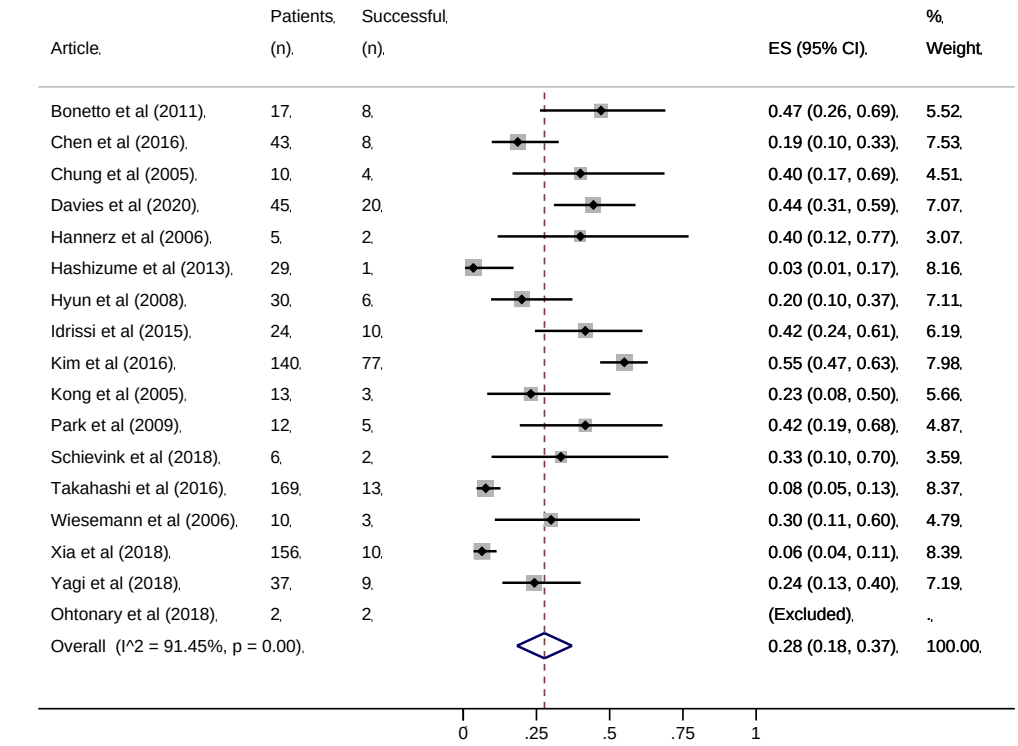
**eFigure 18b. Meta-analysis of proportions of lumbar puncture opening pressure (normal)**



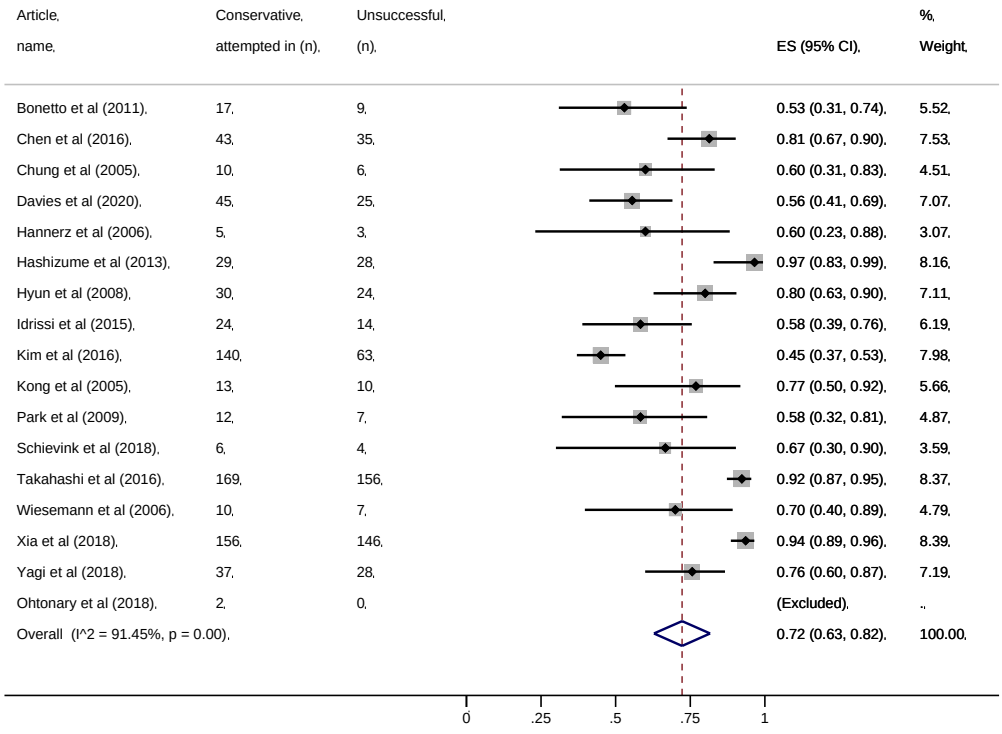
**eFigure 18c. Meta-analysis of proportions of lumbar puncture opening pressure (high)**



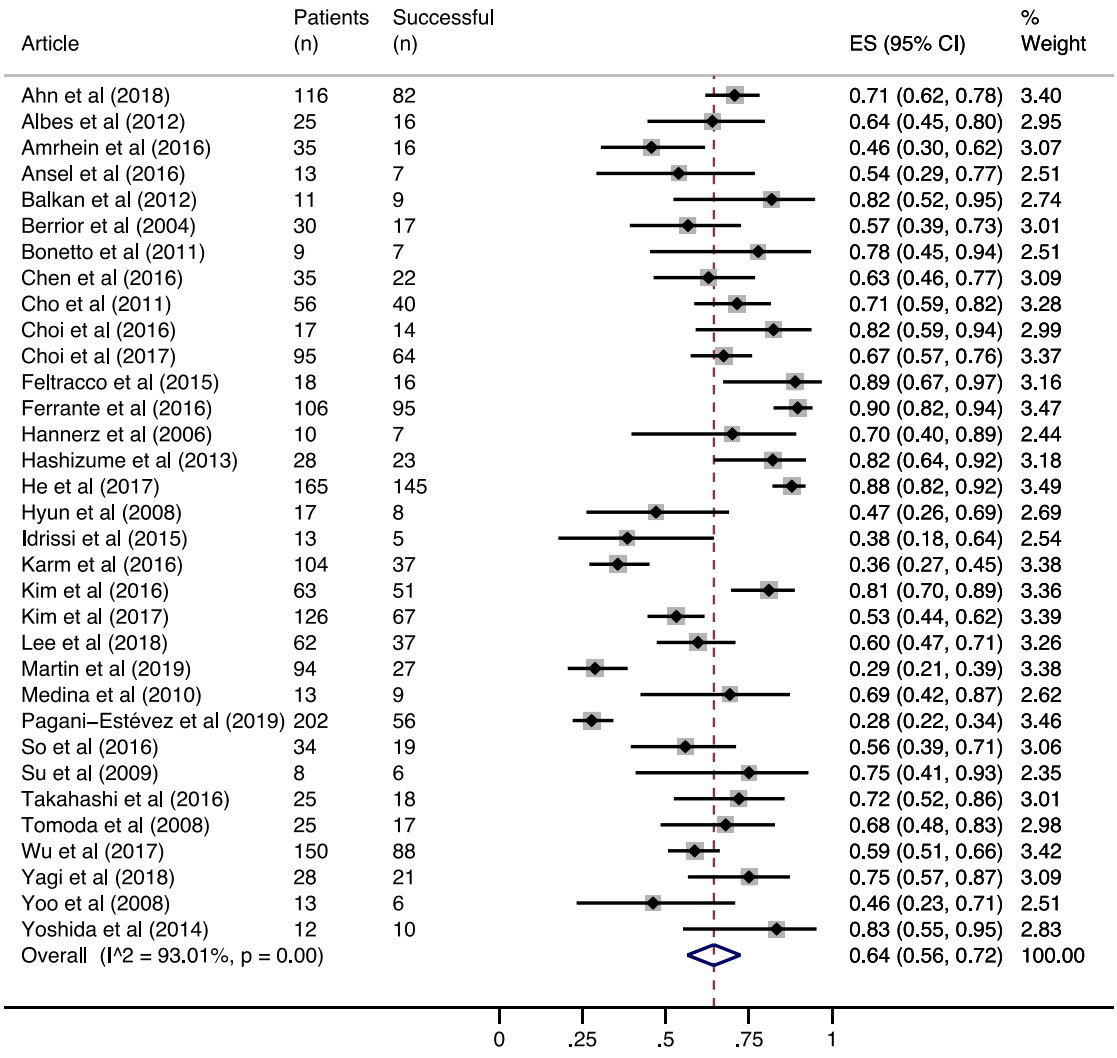
**eFigure 19a. Meta-analysis of proportions of successful conservative treatment**



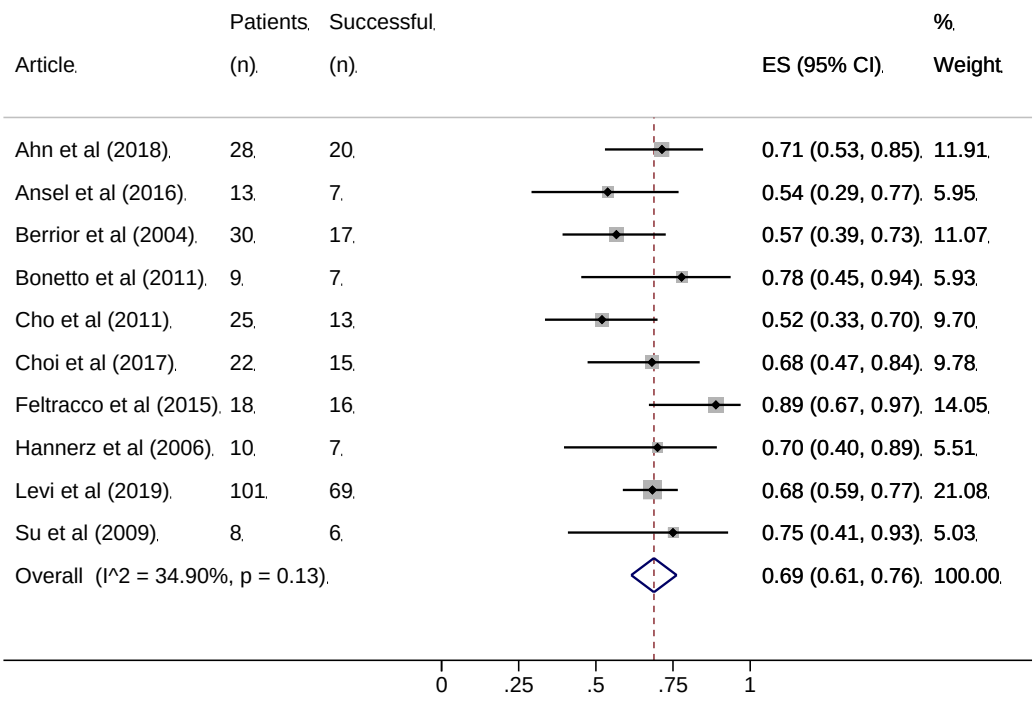

**eFigure 19b. Meta-analysis of proportions of unsuccessful conservative treatment**



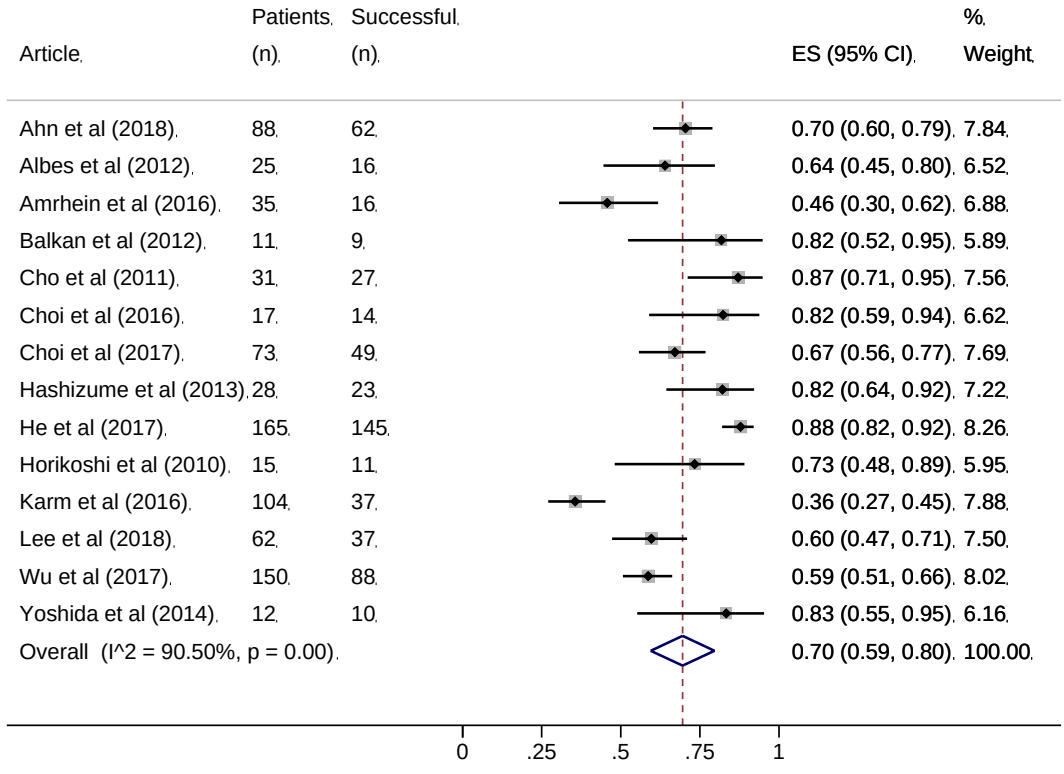
**eFigure 20a. Meta-analysis of proportions of successful first EBP**



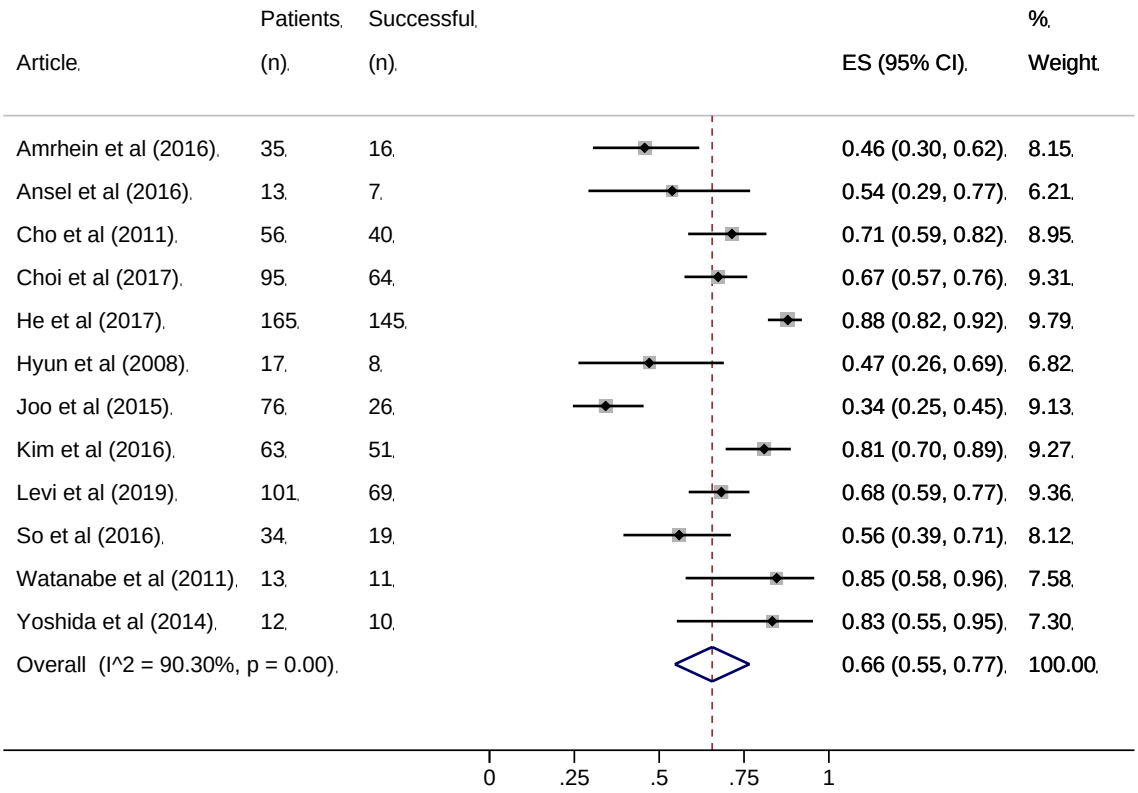
**eFigure 20b. Meta-analysis of proportions of successful nontargeted EBP**



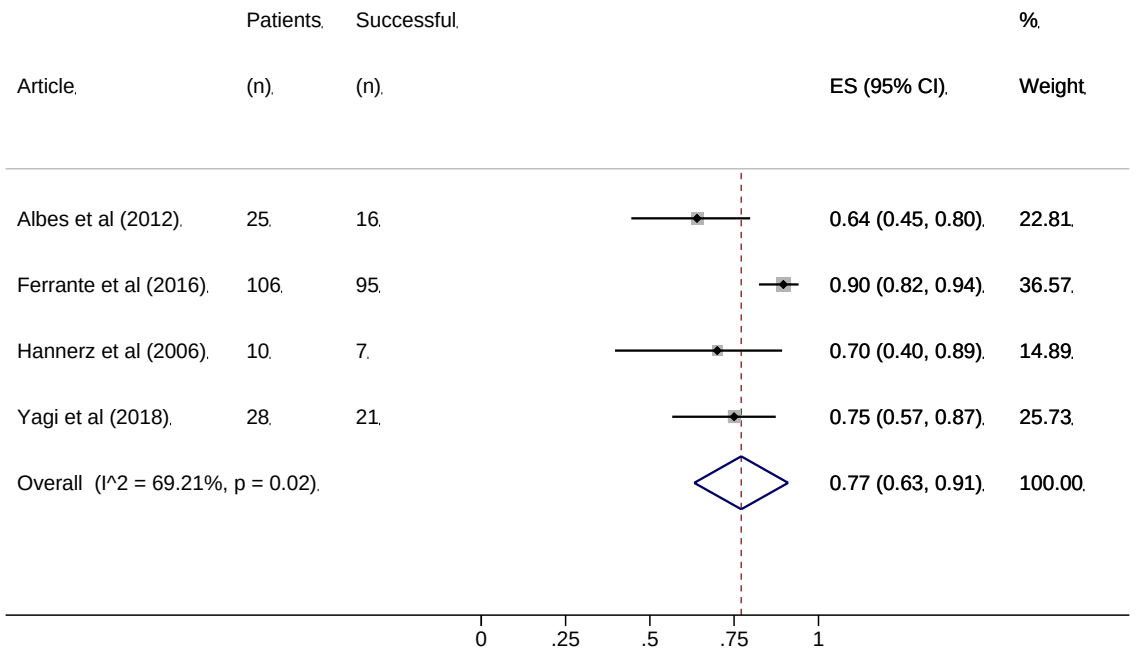

**eFigure 20c. Meta-analysis of proportions of successful targeted EBP**



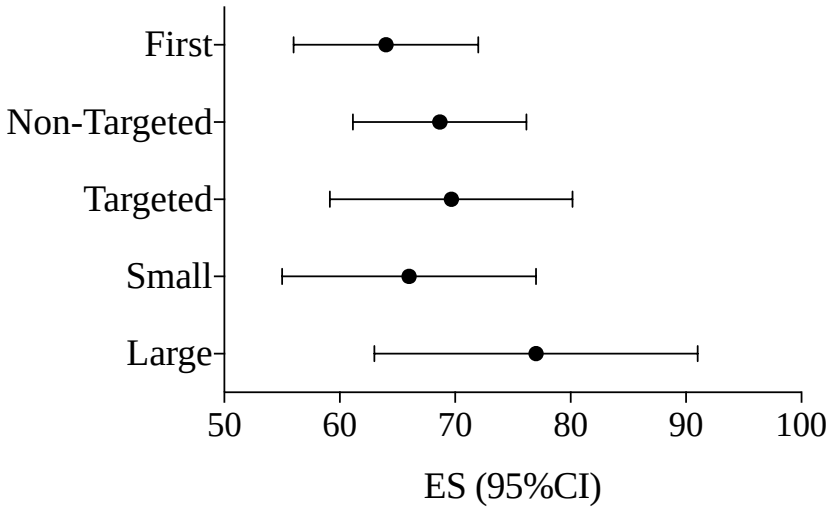
**eFigure 20d. Meta-analysis of proportions of successful small EBP**




**eFigure 20e. Meta-analysis of proportions of successful large EBP**



**eFigure 21. Epidural Blood Patches (EBPs) outcomes. Pooled estimates of proportions (95% CI) of successful EBP treatment stratified by EBP technique (non-targeted/targeted, small/large)**



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