Supplementary Table 3. Meta-regression

Association between ePND and POD

Variables	N, studies	Univariate analysis			Multivariate analysis		
		Coeff	SE	p-value	Coeff	SE	p-value
Age of patients in the study (mean)	9	0.003	0.078	0.965	-0.112	0.093	0.223
Sex (% men) in the study	9	-0.074	0.039	0.058	-0.087	0.043	0.051
POD, %	9	0.042	0.052	0.419	0.114	0.072	0.109
ASA (% III-IV) in the study	6	0.056	0.030	0.061			
Operation time	8	-0.006	0.011	0.559			

Association between ePND and PACU LoS

Variables	N, studies	Univariate analysis			Multivariate analysis		
		Coeff	SE	p-value	Coeff	SE	p-value
ePND type (ref. = EA)	16	-0.399	0.319	0.211	-0.399	0.463	0.390
Age of patients in the study (mean)	16	-0.013	0.019	0.486	0.003	0.036	0.930
Sex (% men) in the study	16	0.007	0.015	0.612	-0.010	0.031	0.450
ASA (% III-IV) in the study	15	-0.013	0.015	0.372	-0.023	0.018	0.219
IA (% of patients with inhalation anesthesia)	12	0.008	0.008	0.298	0.014	0.012	0.231
Operation time	11	-0.001	0.004	0.942			
Anesthesia time	6	-0.024	0.011	0.040*			

Association between ePND and hospital LoS

Variables	N, studies	Univariate analysis			Multivariate analysis		
		Coeff	SE	p-value	Coeff	SE	p-value
ePND type (ref. = EA)	12	-0.488	0.229	0.033	-0.649	0.457	0.156
Age of patients in the study (mean)	12	0.009	0.014	0.507	0.007	0.019	0.723
Sex (% men) in the study	12	-0.016	0.011	0.123	0.001	0.022	0.994
ASA (% III-IV) in the study	11	0.003	0.009	0.667	-0.002	0.014	0.892
IA (% of patients with inhalation anesthesia)	10	0.003	0.006	0.637	0.003	0.009	0.754

Operation time	8	0.005	0.004	0.336		

ePND, Early Postoperative Neurocognitive Disorders; PACU, Post Anesthesia Care Unit; POD, Postoperative Delirium; LoS, Length of Stay; ASA, American Society of Anesthesiologists; IA, Inhalational Anesthetics; SE, Standard Error

Meta-regression allows to identify which characteristics of the study could affect the result of the meta-analysis (effect size). In the context of our study, meta-regression allows to identify which characteristics of the studies (study-level variations) could affect the association between early Post-operative Neurocognitive Disorders (ePND) and studied outcomes (POD, PACU / hospital LoS). Meta-regression can be either univariate or multivariate. All covariates (characteristics of studies) were first tested in a univariate model, then the covariates that were available for most of the studies were considered for a multivariate model. Covariance coefficients, standard error and p-values are presented.

For a correct meta-regression, The Cochrane handbook suggests a minimum of 10 studies for each study-level variable without providing justifications, and there should be at least 6 to 10 studies for a continuous study level variable. For a categorical subgroup variable, each subgroup should have a minimum of 4 studies.