

# Supplementary Appendix

**S1 Table. Quality Assessment**

Quality assessment criteria	Amer	Apasarthana rak A	Bantar C	Borde JP 1	Borde JP 2	Borde JP 3
-----------------------------	------	-------------------	----------	------------	------------	------------

**Selection**

Representativeness of exposed cohort?	*	*	*	*	*	
Selection of the non-exposed cohort?	*	*	*	*	*	*
Ascertainment of exposure?	*	*	*	*	*	*
Demonstration that outcome of interest was not present at start of study?	*	*	*	*	*	*

**Comparability**

Comparability of cohorts on the basis of the design or analysis	*	**	*	**	**	**
---	---	----	---	----	----	----

**Outcome**

Assessment of outcome	*	*	*	*	*	*
Follow-up long enough for outcomes to occur		*		*	*	*
Adequacy of follow-up of cohorts		*		*	*	*

<b>Score</b>	<b>5</b>	<b>9</b>	<b>5</b>	<b>9</b>	<b>9</b>	<b>8</b>
--------------	----------	----------	----------	----------	----------	----------

Quality assessment criteria	Boyles TH	Bozkurt	Cisneros	Cook	Gould	Hou D	Kim YC	Lin YS	Mach
-----------------------------	-----------	---------	----------	------	-------	-------	--------	--------	------

**Selection**

Representativeness of exposed cohort?	*	*	*	*	*		*	*	*
Selection of the non-exposed cohort?	*	*	*	*	*	*	*	*	
Ascertainment of exposure?	*	*	*	*	*	*	*	*	
Demonstration that outcome of interest was not present at start of study?	*	*	*	*	*	*	*	*	*

**Comparability**

Comparability of cohorts on the basis of the design or analysis	*	*	*	*		*	*	*	
---	---	---	---	---	--	---	---	---	--

**Outcome**

Assessment of outcome	*	*	*	*	*	*	*	*	*
Follow-up long enough for outcomes to occur	*		*	*	*	*	*	*	*
Adequacy of follow-up of cohorts	*			*		*	*	*	*

<b>Score</b>	<b>8</b>	<b>5</b>	<b>7</b>	<b>8</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>5</b>
--------------	----------	----------	----------	----------	----------	----------	----------	----------	----------

Quality assessment criteria	Meyer E	Ng CK	Nitsch-Osu	Nitsch-Osuch 2	Niwa T	Pate PG	Peto Z
-----------------------------	---------	-------	------------	----------------	--------	---------	--------

**Selection**

Representativeness of exposed cohort?					*	*	
Selection of the non-exposed cohort?	*	*	*	*	*	*	*
Ascertainment of exposure?	*	*	*	*	*	*	*
Demonstration that outcome of interest was not present at start of study?	*	*	*	*	*	*	*

**Comparability**

Comparability of cohorts on the basis of the design or analysis			*	*	*	*	
---	--	--	---	---	---	---	--

**Outcome**

Assessment of outcome	*	*	*	*	*	*	*
Follow-up long enough for outcomes to occur	*	*	*	*			*
Adequacy of follow-up of cohorts	*	*	*	*			*

<b>Score</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>6</b>
--------------	----------	----------	----------	----------	----------	----------	----------

Quality assessment criteria	Ruttimann	Storey FD	Yeo CL 1	Yeo CL 2			
-----------------------------	-----------	-----------	----------	----------	--	--	--

**Selection**

Representativeness of exposed cohort?	*	*		*			
Selection of the non-exposed cohort?	*	*	*	*			
Ascertainment of exposure?	*	*	*	*			
Demonstration that outcome of interest was not present at start of study?	*	*	*	*			

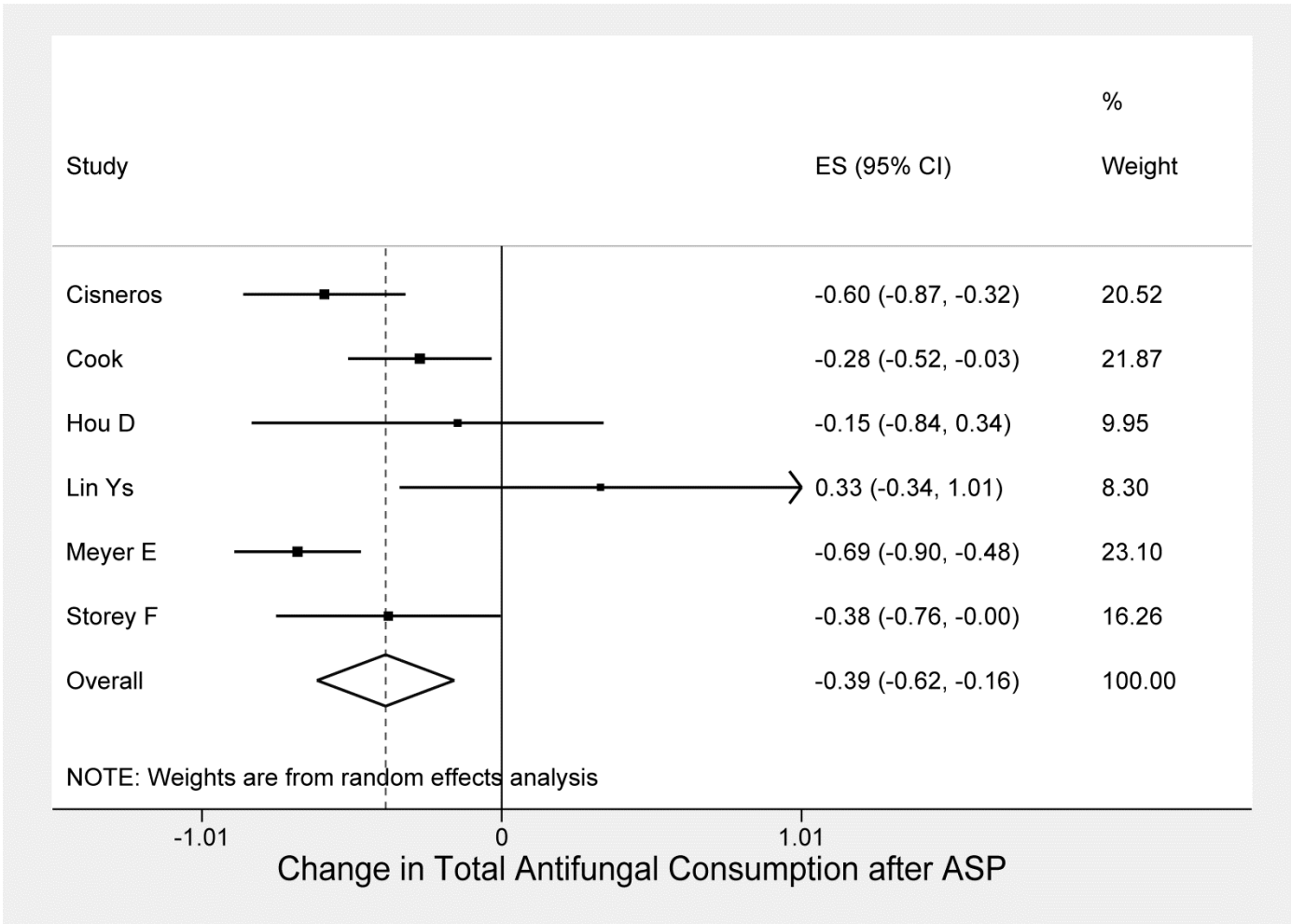
**Comparability**

Comparability of cohorts on the basis of the design or analysis	*	*	*	*			
---	---	---	---	---	--	--	--

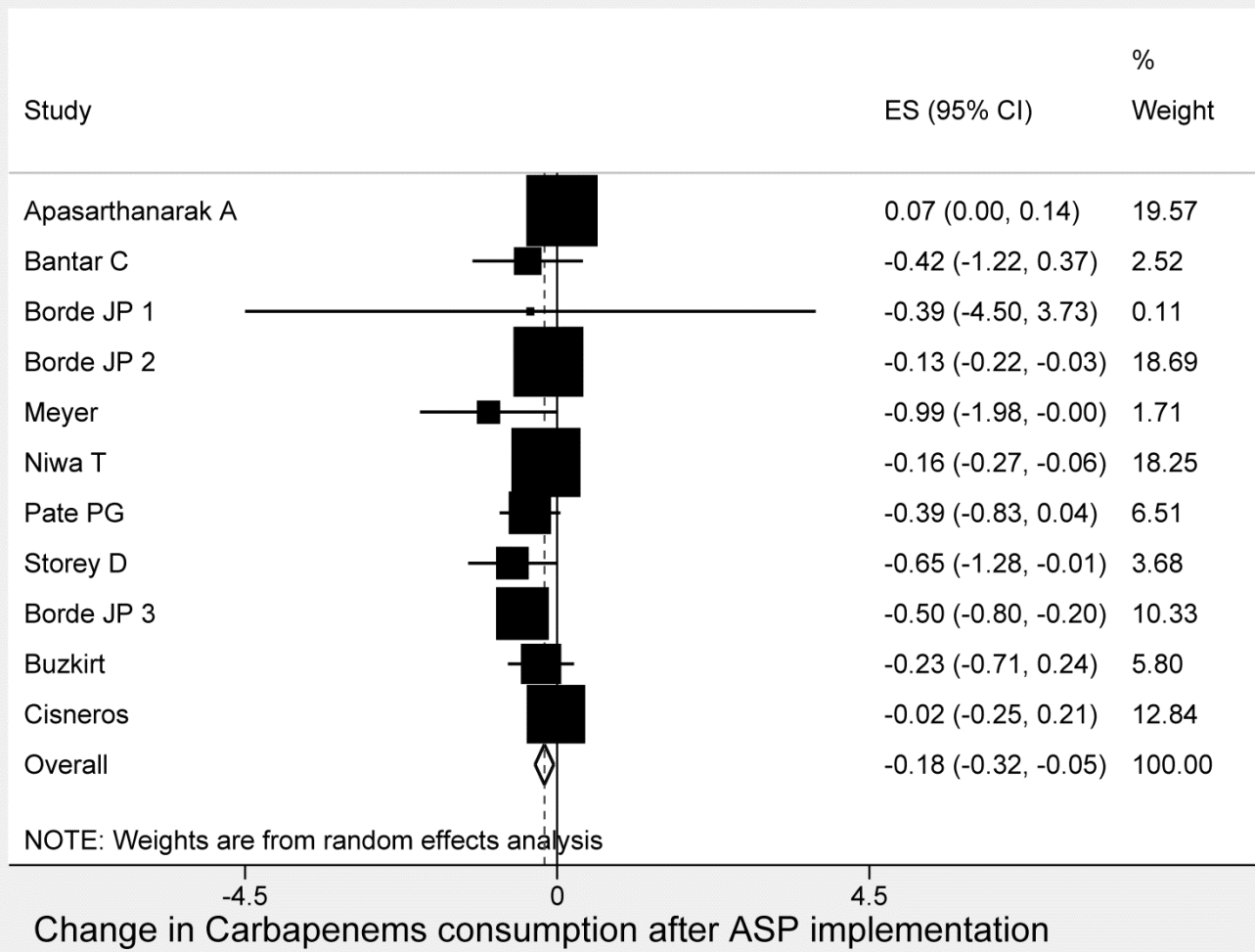
**Outcome**

Assessment of outcome	*	*	*	*			
Follow-up long enough for outcomes to occur	*	*	*	*			
Adequacy of follow-up of cohorts	*	*	*	*			

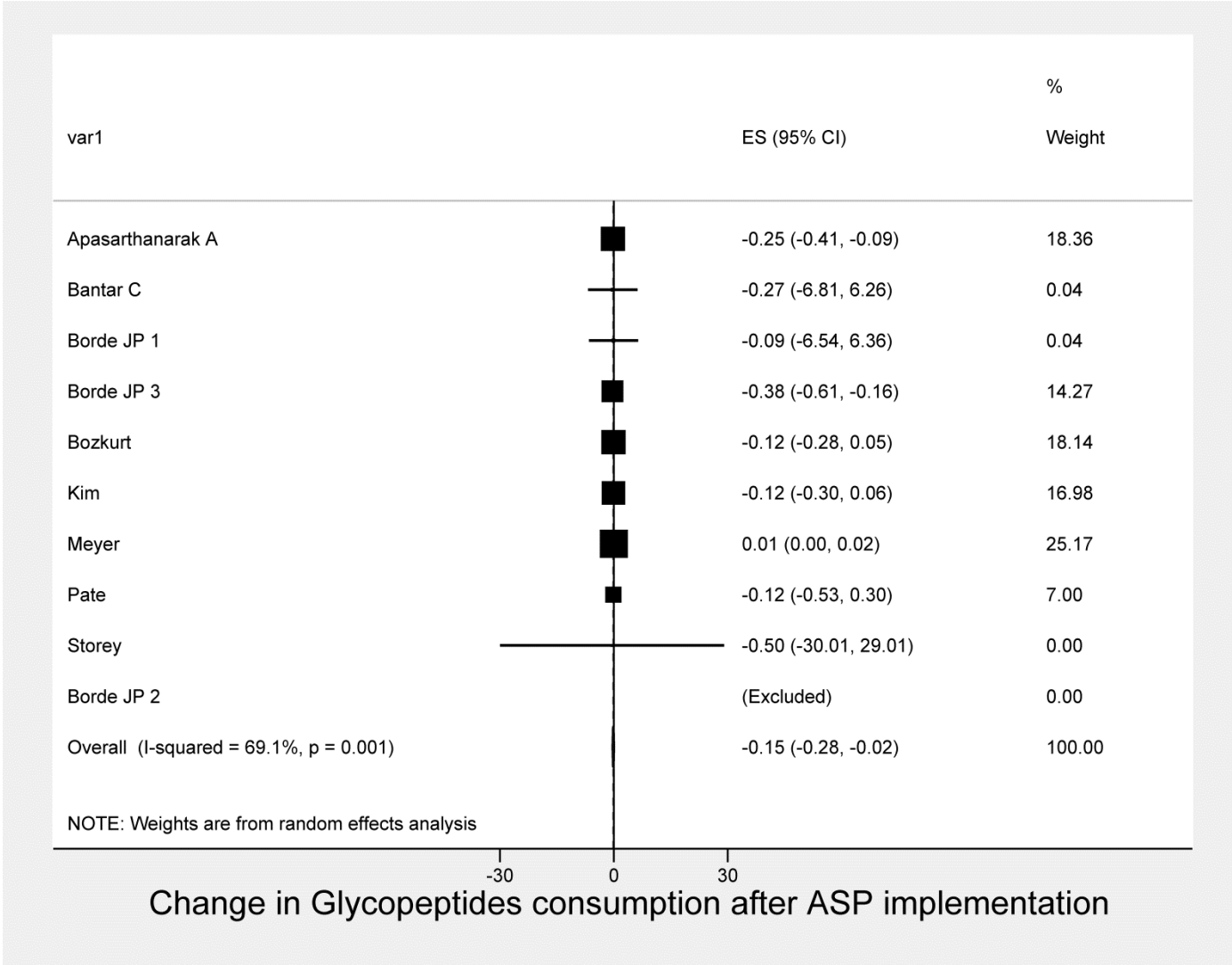
<b>Score</b>	<b>8</b>	<b>8</b>	<b>7</b>	<b>8</b>			
--------------	----------	----------	----------	----------	--	--	--



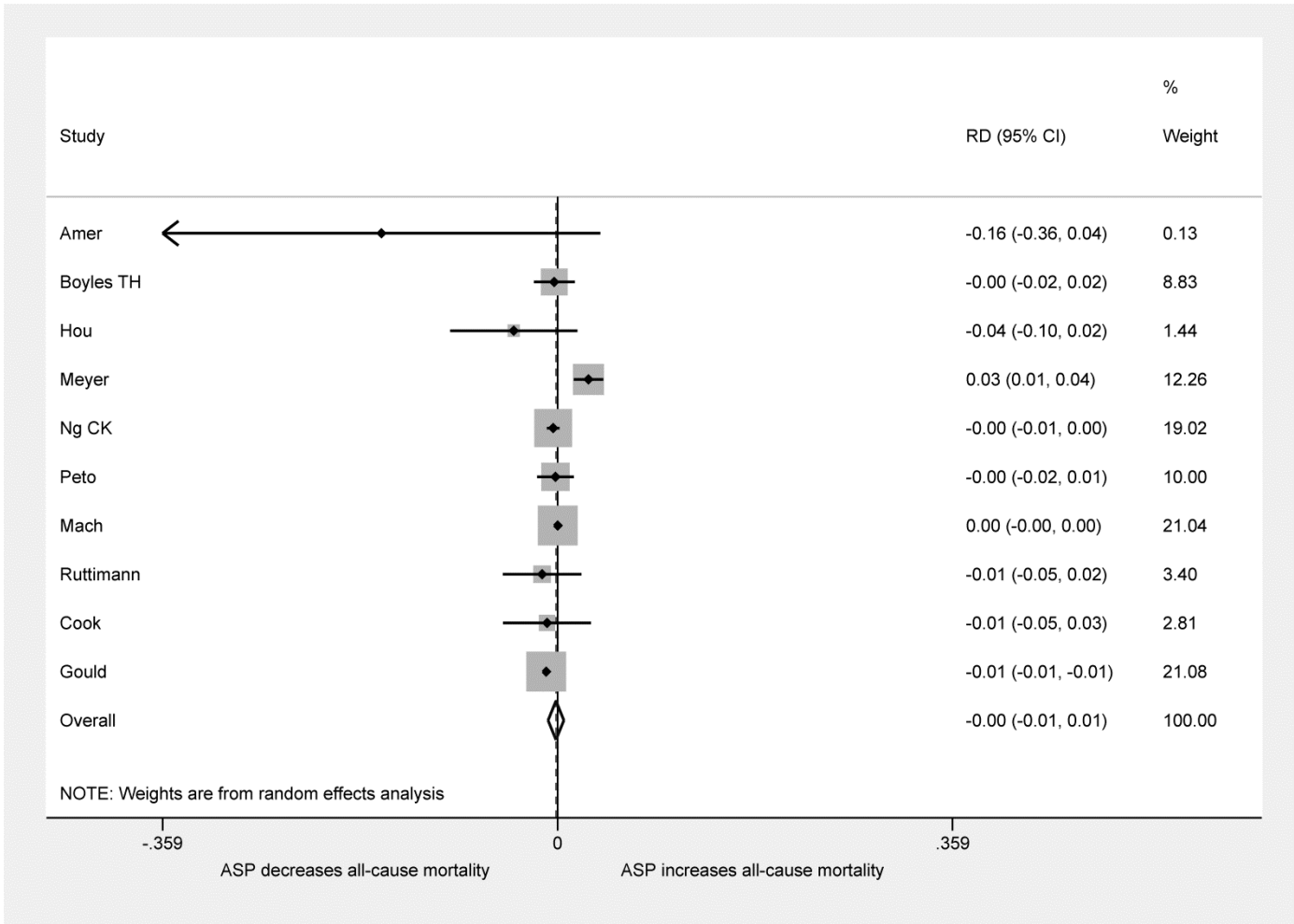
**Supplementary Figure 1. Forest plot of included studies.** Individual and combined change of consumption of antifungals antibiotics after ASP implementation. CI, confidence interval.



**Supplementary Figure 2. Forest plot of included studies.** Individual and combined change of consumption of carbapenems after ASP implementation. CI, confidence interval

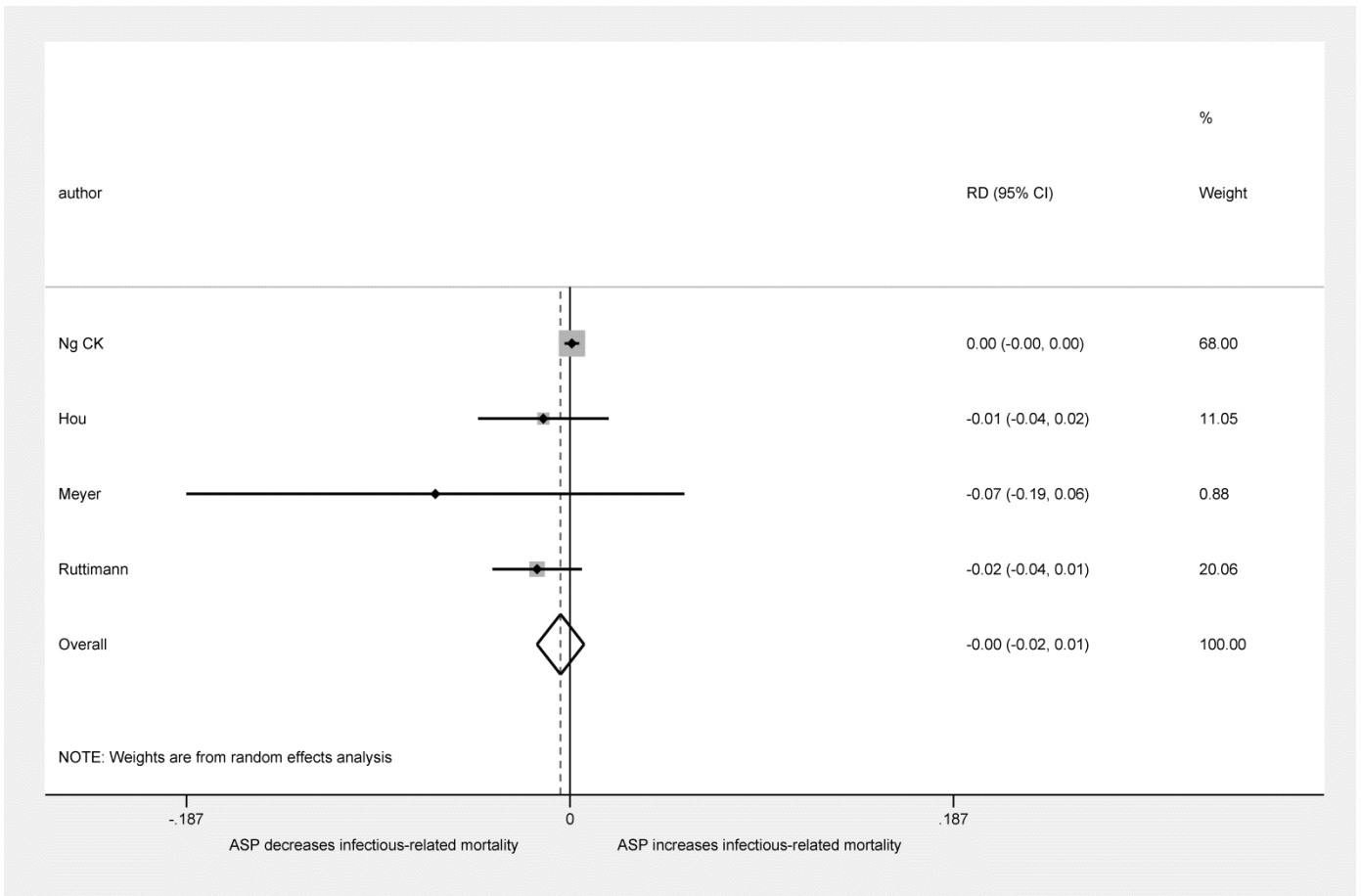


**Supplementary Figure 3. Forest plot of included studies.** Individual and combined change of consumption of glycopeptides after ASP implementation. CI, confidence interval

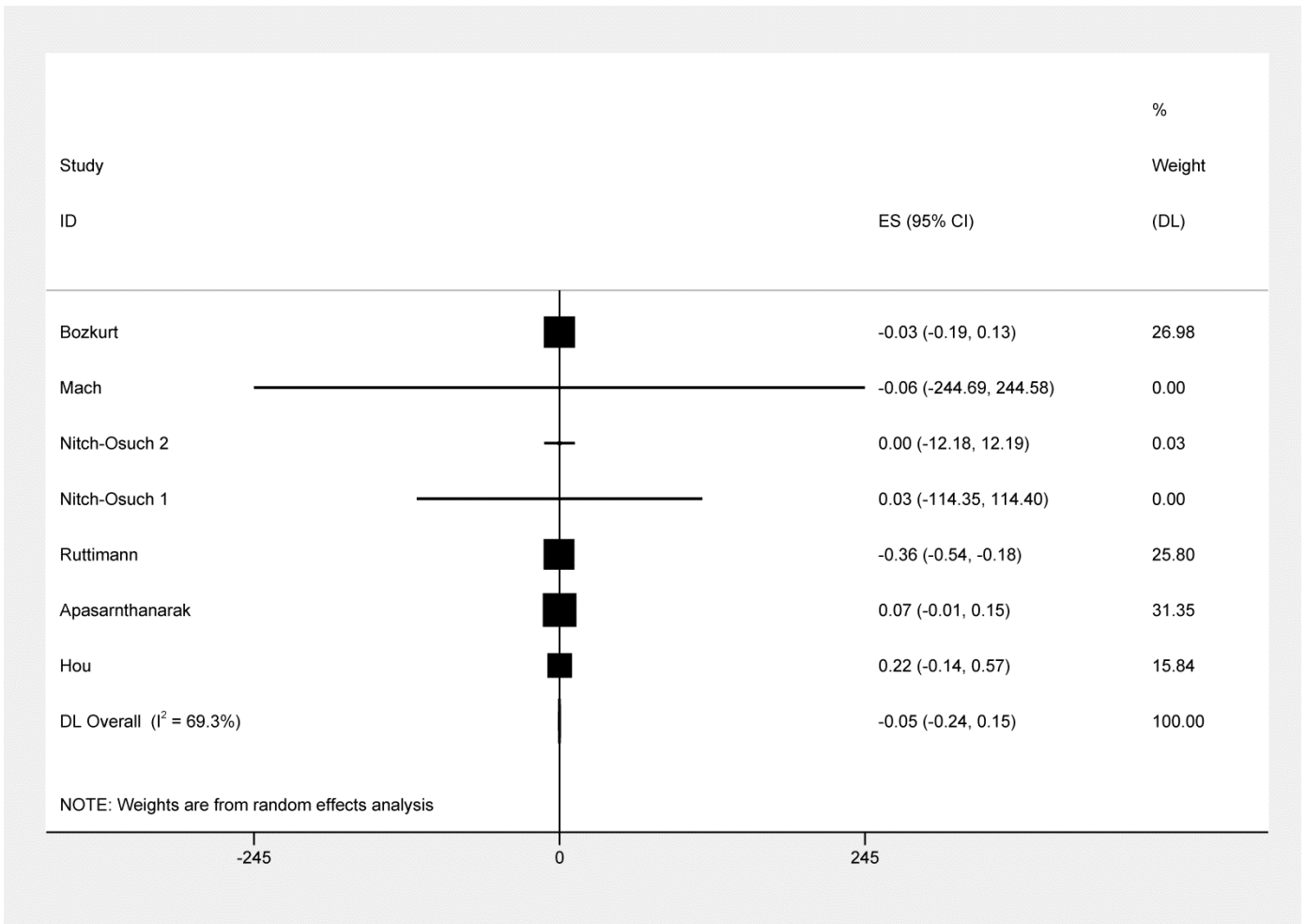


**Supplementary Figure 4. Forest plot of included studies.** Estimated Risk Difference (RD) in all-cause mortality rates before and after ASP implementation. CI, confidence interval.

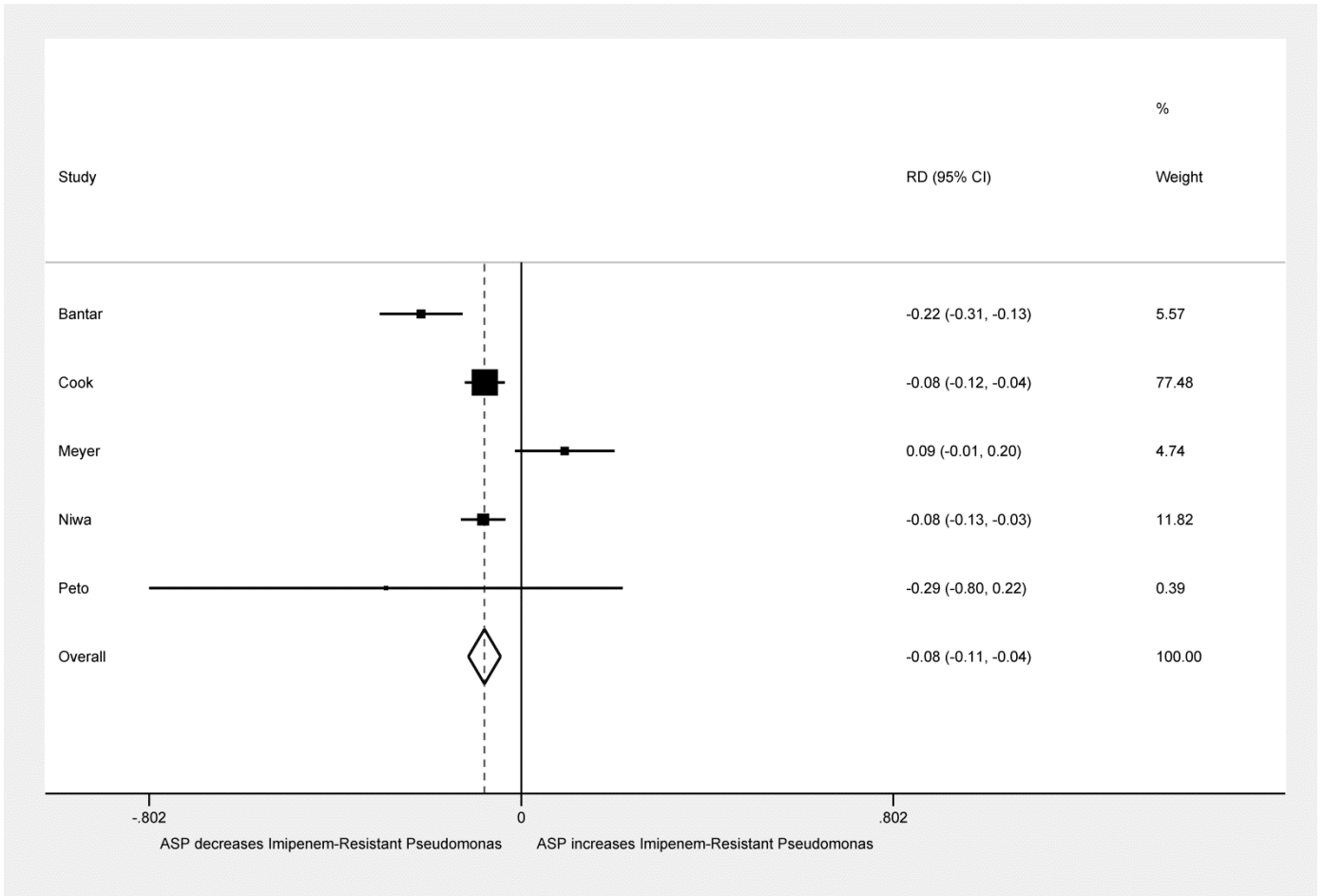




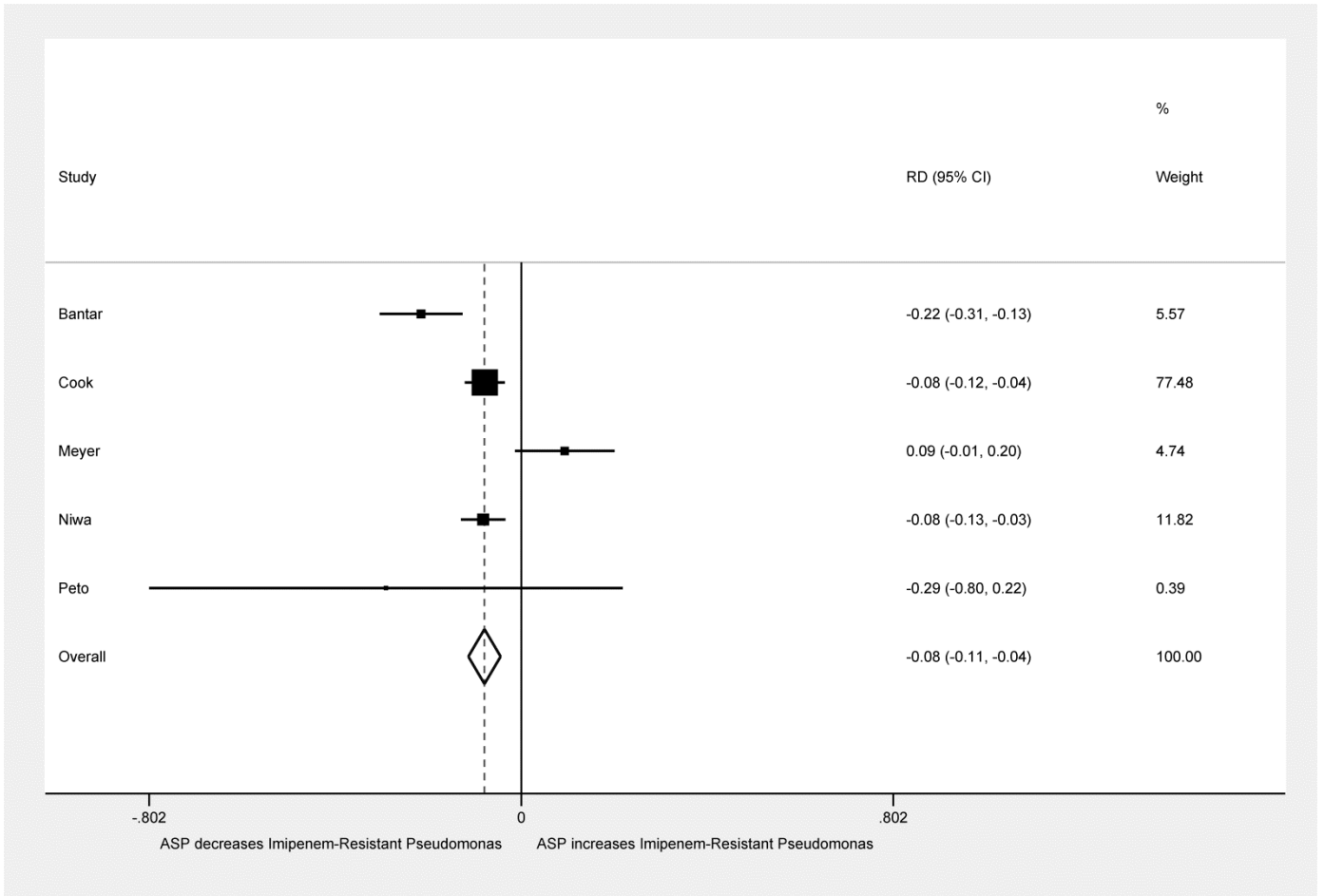
**Supplementary Figure 5. Forest plot of included studies.** Estimated Risk Difference (RD) in infection-related mortality rates before and after ASP implementation. CI, confidence interval



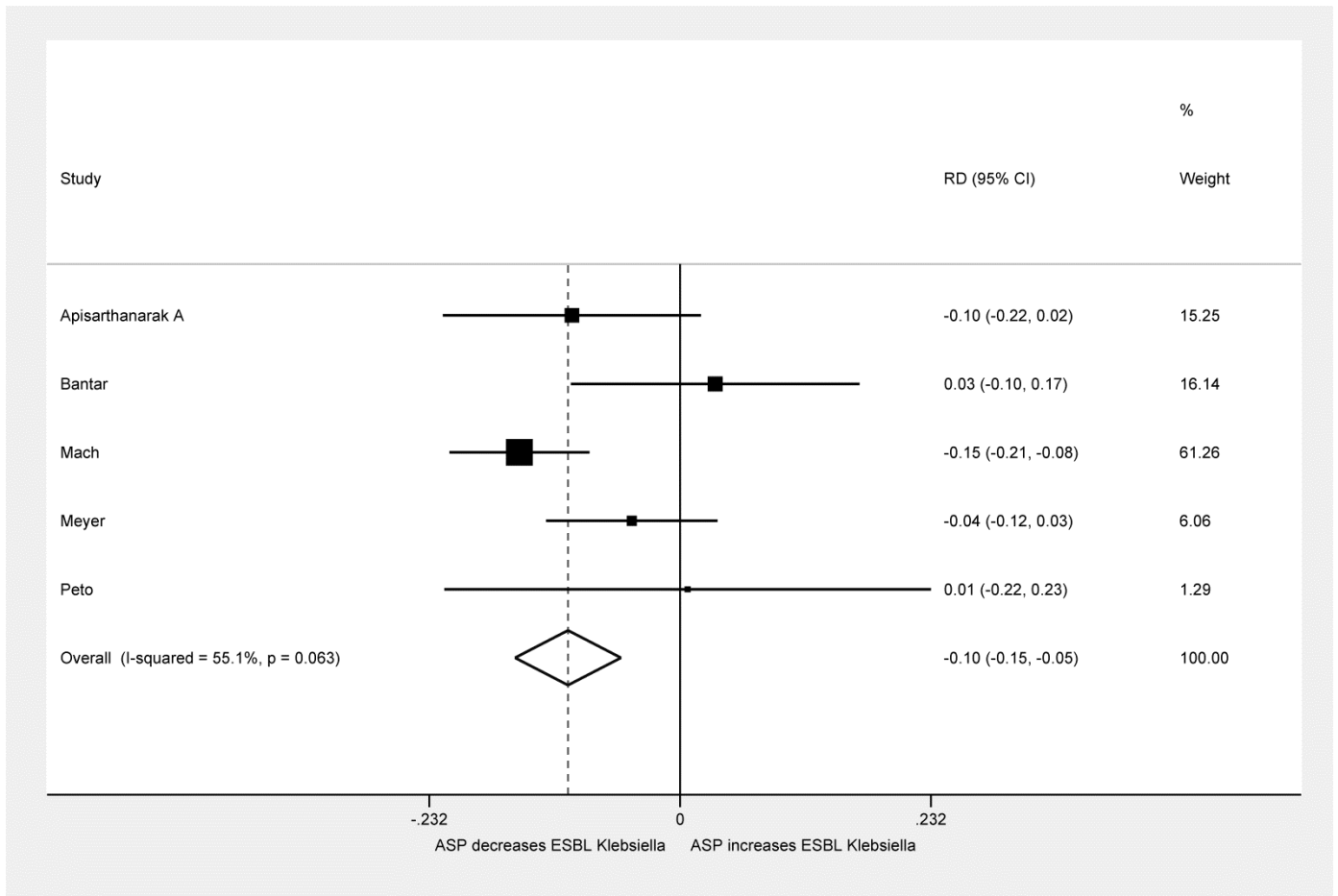
**Supplementary Figure 6. Forest plot of included studies.** Individual and combined change of infection rate after ASP implementation. CI, confidence interval



**Supplementary Figure 7. Forest plot of included studies.** Estimated Risk Difference (RD) in MRSA isolates before and after ASP implementation. CI, confidence interval. MRSA, methicillin-resistant *S. aureus*



**Supplementary Figure 8. Forest plot of included studies.** Estimated Risk Difference (RD) in imipenem-resistant *P.aeruginosa* isolates before and after ASP implementation. CI, confidence interval.



**Supplementary Figure 9. Forest plot of included studies.** Estimated Risk Difference (RD) in ESBL-*Klebsiella* isolates before and after ASP implementation. CI, confidence interval. ESBL, extended-spectrum beta-lactamase.