Study	Cases	Total	Incidence	95% C.I.	
Design = Prospective cohort Algado-Sellés, N., et al. (2022)	110	2200	5.00	[4.13; 6.00]	+
Assawapalanggool, S(2016)	293	4988	5.87	[5.24; 6.56]	
Bediako-Bowan, A. A. A (2020). Bellusse, G. C(2020)	198 98	1197 484	16.54	[14.48; 18.77] [16.76; 24.11]	
Bhangu, A (2018)		12539	12.27	[11.70; 12.85]	
de la Cuesta, R. S (2021)	20	284	7.04	[4.35; 10.67]	<b>—</b>
de Oliveira, A. C (2006). Dubinsky-Pertzov, B. (2019)	149 104	609 662	24.47	[21.10; 28.08]	
Emil, A (2015)	67	302	22.19	[13.02; 18.71] [17.63; 27.30]	
Geubbels, E., et al. (2006)	256	4979	5.14	[4.54; 5.79]	
GlobalSurg Collaborative(2018) Golzarri, M. F(2019).	520 25	4546 171		[10.53; 12.40] [9.69; 20.82]	
Hoffman, T(2021).	197	865	22.77	[20.02; 25.72]	
Hübner, M (2011) Jeong, S. J., et al. (2013)	428	2393	17.89	[16.37; 19.48]	
Jesús Hernández-Navarrete, M.,	71 15	2091 148	3.40 10.14	[2.66; 4.26] [5.78; 16.17]	
Kasatpibal, N., et al. (2006)	26	2139	1.22	[0.80; 1.78]	•
Ketema, D. B., et al. (2020) Killian,C. A(2001)	132 59	520 765	25.38	[21.70; 29.35] [5.92; 9.84]	
Kim, E. S (2012)	170	4238	4.01	[3.44; 4.65]	•
Lakoh, S., et al. (2022)	39	338	11.54		
Lijaemiro, H., et al. (2020) Limón, E (2014)	25 2826	166 13661	15.06	[9.99; 21.42] [20.01; 21.38]	
Mpogoro, F. J (2014)	34	312	10.90		÷ -
Nguhuni, B., et al. (2017)	45	374		[8.91; 15.77]	÷
Páramo-Zunzunegui, J., et al. (2021) Rodríguez-Caravaca, G (2017)	16 30	130 1532	12.31 1.96		
Sánchez-Santana, T., et al. (2017)	43	930	4.62	[3.37; 6.18]	+
Swart, O., et al. (2021).	46 134	188 2809	24.47 4.77	[18.50; 31.25]	- <b>-</b> -
Tang, R(2001) Thelwall, S (2015),		2009	7.93	[4.01; 5.62] [7.56; 8.31]	
Tran, T. S (2000)	95	969	9.80	[8.00; 11.85]	
Utsumi, M., et al. (2010). Wang 7, W(2019)	1471 68	12015 1290	12.24 5.27	[11.66; 12.84]	• •
Wang, Z. W(2019) Wloch, C (2012).	394	4107	9.59	[4.12; 6.64] [8.71; 10.54]	
Zejnullahu, V. A (2019)	32	325	9.85	[6.83: 13.62]	· ·
Araki, T., et al. (2014). Bicudo-Salomão, A(2019).	38 73	195 234	19.49	[14.17; 25.75] [25.32; 37.56]	
Bislenghi, G., et al. (2021)	35	287		[8.64; 16.55]	· 🖶 🗍
Bogdanic, B., et al. (2013)	12	832	1.44 10.92	[0.75; 2.51]	
Delgado-Miguel.C(2020) Drake, T. M(2016)	44 472	403 7965	5.93	[8.05; 14.38] [5.42; 6.47]	
Gomila, A (2018).	669	3701	18.08	[16.85; 19.35]	
Hou, TY(2020). Kleeff, J., et al. (2015).	134 7	3663 93	3.66 7.53	[ 3.07; 4.32] [ 3.08; 14.90]	
Kudsi, O. Y (2021)	14	254	5.51	[ 3.05; 9.08]	
Li, Z., et al. (2021).	71	953	7.45	[5.86; 9.30]	
Oliveira, A. C., et al. (2002) Opoien, H. K., et al. (2007)	140 29	504 326	27.78	[23.91; 31.91] [ 6.04; 12.53]	
Taylor, G (1998)	50	651	7.68	[ 5.75; 10.00]	
Uchino, M(2013)	108	405		[22.42; 31.26]	
Uchino, M., et al. (2009) Hollenbeak, C. S (2001).	71 293	562 777	37.71	[10.00; 15.67] [34.29; 41.22]	
Tanner, J., et al. (2009)	29	105	27.62	[19.34; 37.20] [ 1.57; 20.39] [21.02; 39.61]	_ <b></b>
Ruiz-Tovar, J(2013)	3 30	40 101	7.50	[1.57; 20.39]	
Aktas, A (2019) Random effects model	50	101	10.72	[8.75; 13.06]	+ -
Heterogeneity: $l^2 = 99\%$ , $\tau^2 = 0.7074$ , $\chi^2_{55} =$	4478.8 (p	= 0)			
Design = Retrospective cohort	1277	9275	12 77	[13.07; 14.49]	
Abdi, H., et al. (2018) Anandalwar, S. P (2018)	133	1333	9.98		
Dong, Z. M (2015)	76	1384	5.49	[4.35; 6.83]	+
Hemmila, M. R (2010) Kim, J. H(2019)	987 25	21475 353	4.60	[4.32; 4.88] [4.64; 10.28]	
Lawson,E.H(2013)	2943	27011	10.90	[10.53; 11.27]	<b>1</b>
Lemke.M(2021)	754	3430	21.98	[20.61; 23.41]	+
Xiao, Y (2015) Aghdassi, S. J. S (2021)		16263 99836	6.21 2.88	[5.84; 6.59] [2.78; 2.98]	
Alkaaki, A(2019)	55	337	16.32	[12.54; 20.71]	- <b>-</b>
Amri, R., et al. (2017) Biscione E. M(2007)	90 224	1481 6761	6.08 3.31	[4.91; 7.42]	
Biscione, F. M(2007) Blumetti, J., et al. (2007)	105	428		[2.90; 3.77] [20.53; 28.89]	-
Chipko, J. (2017)	16	223	7.17	[4.16; 11.39] [13.42; 32.98]	
Coleman, J. S (2014). Fukuda, H. (2016)	2331	77 24049	22.08	[13.42; 32.98] [9.32; 10.07]	
Funamizu, N., et al. (2020)	30	93		[22.93; 42.75]	<b>—</b> —
Hellinger, W. C., et al. (2009)	66	370		[14.07; 22.13]	<b>₩</b> _
Hreńczuk, M., et al. (2020) Johnston, C., et al. (2022).	16 274	60 12954	26.67 2.12	[16.07; 39.66] [1.87; 2.38]	
Mik, M (2016)	364	2240	16.25	[14,74; 17,84]	
Oliveira, R. A., et al. (2019)	42	156		[20.14; 34.60]	
Fusco, S. D. B (2016) Shree, R (2016)	26 178	155 2739	6.50	[11.26; 23.60] [5.60; 7.49]	
Mohan, S (2015)	530	5145	10.30	[9.48; 11.16]	<b>•</b>
Random effects model Heterogeneity: $l^2 = 100\%$ , $\tau^2 = 0.6971$ , $\chi^2_{24}$	= 6533 (c	= 0)	10.52	[7.78; 14.07]	•
	(p	-,			
Random effects model Heterogeneity: $l^2 = 99\%$ , $\tau^2 = 0.6953$ , $\chi^2_{00} =$	12986.44	(p = 0)	10.66	[9.02; 12.55]	•
Test for subgroup differences: $\chi_1^2 = 0.01$ , df	= 1 (p = 0.	92)			0 20 40 60 80 100
					Incidence of SSI

Figure S1: A meta-analysis of the studies that reported surgical site infection incidence by study design is shown. This figure indicates that there is no significant difference between the pooled incidence of surgical site infection in subgroups of retrospective or prospective cohort studies (P=0.92).

Copyright: ©Iranian Journal of Medical Sciences. This is an open-access article distributed under the terms of the Creative Commons Attribution-NoDerivatives 4.0 International License. This license allows reusers to copy and distribute the material in any medium or format in unadapted form only, and only so long as attribution is given to the creator. The license allows for commercial use.

Study	Cases	Total	Incidence	95% C.I.	
WHO region = EURO			5.00		_
Algado-Sellés, N., et al. (2022) de la Cuesta, R. S (2021)	110 20	2200 284	5.00 7.04	[4.13; 6.00] [4.35: 10.67]	
Dubinsky-Pertzov, B. (2019)	104	662	15.71	[4.35; 10.67] [13.02; 18.71]	
Emil, A (2015) Geubbels E. et al. (2006)	67 256	302 4979	22.19	[17.63; 27.30] [4.54; 5.79]	
Geubbels, E., et al. (2006) Hoffman, T(2021).	197	865	5.14 22.77	[20.02; 25.72] [16.37; 19.48]	
Hübner, M (2011) Jesús Hernández-Navarrete, M.,	428 15	2393 148	17.89 10.14	[16.37; 19.48] [5.78; 16.17]	
Limón, E (2014)	2826	13661	20.69	[20.01; 21.38] [7.20; 19.22]	
Páramo-Zunzunegui, J., et al. (2021) Sánchez-Santana, T., et al. (2017)	16 43	130 930	12.31 4.62		
Thelwall, S (2015).	1600	20177	7.93	[7.56; 8.31]	
Wloch, C (2012).	394 32	4107 325	9.59 9.85	[8.71; 10.54] [6.83; 13.62]	
Zejnullahu, V. A (2019) Bislenghi, G., et al. (2021) Bogdanic, B., et al. (2013)	32	325	9.85	[ 8 64: 16 55]	-
Bogdanic, B., et al. (2013)	12	832	1.44	[ 0.75; 2.51] [ 8.05; 14.38]	•
Delgado-Miguel.C(2020) Drake, T. M(2016)	44 472	403 7965	10.92 5.93	[ 8.05; 14.38] [ 5.42; 6.47]	
Gomila, A (2018).	669	3701	18.08	[16.85; 19.35] [ 3.08; 14.90]	•
Kleeff, J., et al. (2015). Opoien, H. K., et al. (2007)	7 29	93 326	7.53 8.90	[ 3.08; 14.90] [ 6.04; 12.53]	
Aghdassi, S. J. S (2021)	2874	99836	2.88	[2.78; 2.98]	
Hreńczuk, M., et al. (2020)	16 364	60 2240	26.67	[16.07; 39.66]	
Mik, M (2016) Tanner J. et al. (2009)	304	105	16.25 27.62	[14.74; 17.84]	
Tanner, J., et al. (2009) Ruiz-Tovar, J(2013)	3	40	7.50	[ 1.57; 20.39]	
Aktas, A (2019) Random effects model	30	101	29.70 10.71	[19.34; 37.20] [1.57; 20.39] [21.02; 39.61] [8.12; 14.00]	
Heterogeneity: $l^2 = 100\%$ , $\tau^2 = 0.6166$ , $\chi^2_{26}$	= 7541.21	(p = 0)	10.71	[0.12, 14.00]	
WHO region = AFRO					
Bediako-Bowan, A. A. A (2020).	198	1197	16.54	[14.48; 18.77]	-
Ketema, D. B., et al. (2020) Lakoh, S., et al. (2022)	132 39	520 338	25.38 11.54	[21.70; 29.35] [8.33; 15.43]	_ <b>-</b>
Lijaemiro, H., et al. (2022)	25	166	15.06	[9.99; 21.42]	
Lijaemiro, H., et al. (2020) Mpogoro, F. J (2014)	34	312	10 90	[7 67: 14 89]	- 圭
Nguhuni, B., et al. (2017) Swart, O., et al. (2021).	45 46	374 188	12.03	[8.91; 15.77] [18.50; 31.25]	
Random effects model			16.01	[12.19; 20.75]	•
Heterogeneity: $l^2 = 89\%$ , $\tau^2 = 0.1585$ , $\chi^2_0 =$	54.57 (p <	0.01)			
WHO region = AMRO					
Bellusse, G. C(2020) de Oliveira A. C. (2006)	98 149	484 609	20.25	[16.76; 24.11]	
de Oliveira, A. C (2006). Golzarri, M. F(2019). Killian,C. A(2001)	25	171	14.62	[21.10; 28.08] [ 9.69; 20.82]	-
Killian, C. A(2001) Bicudo-Salomão, A(2019).	59 73	765 234	7.71 31.20	[5.92; 9.84] [25.32; 37.56]	-
Kudsi, O. Y (2021)	14	254	5.51	[3.05 9.08]	
Oliveira, A. C., et al. (2002)	140	504 651	27.78	[23.91; 31.91]	-
Taylor, G (1998) Abdi, H. et al. (2018)	50 1277	9275	13.77	[23.91; 31.91] [5.75; 10.00] [13.07; 14.49] [8.42; 11.71]	*
Abdi, H., et al. (2018) Anandalwar, S. P (2018) Dong, Z. M (2015)	133	1333	9.98	[8.42; 11.71]	
Dong, Z. M (2015) Hemmila, M. R (2010)	76	1384 21475	5.49	[4.35; 6.83]	*
Lawson, E.H(2013)	2943	27011	10.90	[10.53; 11.27]	
Lemke.M(2021)	754 90	3430 1481	21.98 6.08	[8.42, 11.71] [4.35; 6.83] [4.32; 4.88] [10.53; 11.27] [20.61; 23.41] [4.01: 7.42]	
Amri, R., et al. (2017) Biscione, F. M(2007)	224	6761		[4.91; 7.42] [2.90; 3.77]	
Blumetti, J., et al. (2007) Chipko, J. (2017) Coleman, J. S (2014). Hellinger, W. C., et al. (2009)	105	428	24.53	[2.90; 3.77] [20.53; 28.89] [4.16; 11.39] [13.42; 32.98] [14.07; 22.13] [1.87; 2.38] [20.14; 34.60] [11.26; 23.60] [5.60; 7.49]	-
Chipko, J. (2017) Coleman J. S (2014)	16 17	223 77	22.08	[4.16; 11.39]	
Hellinger, W. C., et al. (2009)	66	370	17.84	[14.07; 22.13]	-
Johnston, C., et al. (2022).	274 42	12954 156	2.12	[1.87; 2.38]	
Fusco, S. D. B (2016) Shree, R (2016)	26	155	16.77	[11.26; 23.60]	-
Shree, R (2016) Mohan, S (2015)	178 530	2739 5145	6.50 10.30	[5.60; 7.49]	
Hollenbeak, C. S (2001).	293	777	37.71	[5.60; 7.49] [9.48; 11.16] [34.29; 41.22]	
Random effects model Heterogeneity: $I^2 = 99\%$ , $\tau^2 = 0.7447$ , $\chi^2_{25} =$	3585.9 /-	= 0)	12.13	[ 8.98; 16.19]	*
		-/			
WHO region = WPRO Jeong, S. J., et al. (2013)	71	2091	3.40	$\begin{bmatrix} 2.66; \ 4.26 \\ [ 3.44; \ 4.65 \\ [ 4.01; \ 5.62 ] \\ [ 8.00; \ 11.85 \\ [ 11.66; \ 12.84 ] \\ [ 4.12; \ 6.64 \\ ] \\ [ 14.17; \ 25.75 \\ [ 3.07; \ 4.32 \\ [ 5.86; \ 9.30 ] \\ [ 22.42; \ 31.26 ] \\ [ 10.00; \ 15.67 \\ [ 4.64; \ 10.28 ] \\ [ 5.84; \ 6.59 \end{bmatrix}$	
Jeong, S. J., et al. (2013) Kim, E. S (2012)	170	4238	4.01	[3.44; 4.65]	
Tang, R(2001) Tran T. S (2000)	134 95	2809 969	4.77	[4.01; 5.62]	*
Nin, E. S (2012) Tang, R (2001) Tran, T. S (2000) Utsumi, M., et al. (2010). Wang, Z. W(2019) Araki, T. et al. (2014).	1471	12015	12.24	[11.66; 12.84]	<b>a</b>
Wang, Z. W(2019)	68 38	1290 195	5.27	[4.12; 6.64]	
Hou, TY(2020).	134	3663	3.66	[14.17, 25.75]	
Li 7 et al (2021)	71	953 405	7.45	[5.86; 9.30]	•
Uchino, M(2013) Uchino, M., et al. (2009)	108	405	26.67	[22.42, 31.26] [10.00: 15.67]	
Uchino, M(2013) Uchino, M., et al. (2009) Kim, J. H(2019)	25	353	7.08	[ 4.64; 10.28]	
Xiao, Y (2015) Fukuda, H. (2016)		16263 24049	6.21 9.69	[5.84; 6.59]	
Funamizu, N., et al. (2020)	30	24049 93	32.26	[5.84; 6.59] [9.32; 10.07] [22.93; 42.75] [6.04; 12.56]	
Random effects model Heterogeneity: $I^2 = 99\%$ , $\tau^2 = 0.6141$ , $\chi^2_{14} =$	935 11 /-	< 0.01	8.77	[ 6.04; 12.56]	•
Random effects model Heterogeneity: $l^2 = 99\%$ , $\tau^2 = 0.6328$ , $\chi^2_{74} =$	12559 79	(p = 0)	11.16	[9.47; 13.12]	· · · · · · · · · · · · · · · · · · ·
Test for subgroup differences: $\chi_3^2 = 7.88$ , df	= 3 (p = 0	.05)			0 20 40 60 80 100
					Incidence of SSI

Figure S2: A meta-analysis of the studies that reported surgical site infection incidences by WHO regions is shown. This figure indicates that there is no apparent significant difference in the pooled incidences of surgical site infection among different regions of WHO (Test for subgroup differences was borderline significant, P=0.05).

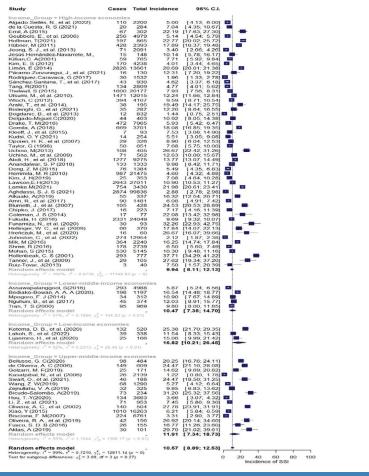


Figure S3: A meta-analysis of the studies that reported surgical site infection incidences by Income level is shown. This figure indicates that there is no significant difference in the pooled incidences of surgical site infection among countries with different income levels (P=0.27).

Study			Incidence	95% C.I.	
surgicalprocedure = Cholecystec Aigado-Sellés, N., et al. (2022) Rodríguez-Caravaca, G (2017) Bogdanic, B., et al. (2013) Random effects model Heterogenety: /² = 9476, r² = 0.4207, r₂² =	tomy	2200	5.00	[4.13: 6.00]	
Rodriguez-Caravaca, G (2017)	30	1532	1.96	[4.13; 6.00] [1.33; 2.78] [0.75; 2.51] [1.18; 5.25] •	
Bogdanic, B., et al. (2013) Random effects model	12	832	1.44	[0.75; 2.51]	
Heterogeneity: $I^2 = 94\%$ , $\tau^2 = 0.4207$ , $\chi^2_2 =$	33.92 (p <	0.01)			
surgicalprocedure = Ceasarean a Assawapalanggool, S(2016) de la Cuesta, R. S (2021) Ketema, D. B., et al. (2020)	nd gyne	cologi	ical surgery	[5.24; 6.56]	
surgicalprocedure = Cessarean a Assawapalangool, S(2021) de la Cuesta, R. S (2021) Ketema, D. B., et al. (2020) Killian, C. A(2001) Lijaemiro, H., et al. (2020) Mpogno, F. J (2014) Mpothum, B. et al. (2021) Mpothu, G. et al. (2017) Widoh, C. (2012) Zeinullahu, V. A (2019)	293	284	7.04	[5.24; 6.56] [4.35; 10.67] [21.70; 29.35]	_
Ketema, D. B., et al. (2020) Killian,C. A(2001)			25.38	[21.70; 29.35] [5.92; 9.84] [9.99; 21.42] [7.67; 14.89] [8.91: 15.77]	-
Lijaemiro, H., et al. (2020) Mpogoro, F., I (2014)	25 34 45 95	166	15.06	[9.99; 21.42]	-
Nguhuni, B., et al. (2017)	45	312 374	12.03	[9.99; 21.42] [7.67; 14.89] [8.91; 15.77] [8.00; 11.85] [8.71; 10.54] [6.84; 13.62] [6.04; 12.53] [2.76; 2.98] [1.3.42; 32.98] [1.87; 2.38] [5.60; 7.49] [6.18; 12.15]	
Wloch, C (2012).			9.59	[8.71; 10.54]	
Zejnullahu, V. A (2019) Opoien, H. K., et al. (2007)	32	325	9.85	[6.83; 13.62]	
Aghdassi, S. J. S (2021) Coleman J. S (2014)	2874	99836 77 12954	2.88	[2.78; 2.98]	-
Johnston, C., et al. (2022).	274	12954	2.12	[1.87; 2.38]	_
Wioch, C (2012) Zejnuliahu, V. A (2019) Opoien, H. K., et al. (2007) Aghdassi, S. J. S (2021) Coleman, J. S (2014). Johnston, C., et al. (2022). Shree, R (2016) Random effects model Heterogenety: / <sup>2</sup> = 99%, r <sup>2</sup> = 0.5120, r <sup>2</sup> <sub>214</sub> =	170	2739	8.71	[6.18; 12.15]	
Heterogeneity: $I^{*} = 99\%$ , $\tau^{*} = 0.5130$ , $\chi^{*}_{14} =$	1614.28 (	p = 0)			
surgicalprocedure = Mixed abdor Bediako-Bowan, A. A. A (2020).	ninal su 198	rgery 1197	16.54	[14.48: 18.77]	-
Bellusse, G. C(2020)	98	484	20.25	[16.76; 24.11]	-
de Oliveira, A. C (2006).	149	609	24.47	[21.10; 28.08]	-
Emil, A (2015) Geubbels, E., et al. (2006)	67 256	609 302 4979	22.19 5.14	[17.63; 27.30] [4.54; 5.79]	-
Golzarri, M. F(2019). Lakob S. et al. (2022)	25	4979 171 338 20177 12015	14.62	[9.69; 20.82]	-
Thelwall, S (2015).	1600	20177	7.93	[7.56; 8.31]	
Otsumi, M., et al. (2010). Wang, Z. W(2019)	1471 68	12015	12.24 5.27	[11.66; 12.84]	
Kleeff, J., et al. (2015). Li, Z., et al. (2021)	71	93	7.53	[3.08; 14.90]	
Interleginery / 2004, 14 00510, 7, 14 Burgicalprocedure = Miked abdor Bellusse, G. C(2020) Bhangu, A. (2018) de Oliveira, A. C. (2006), Emil, A. (2015) Gotzmi, M., et al. (2016), Utsumi, M., et al. (2016), Utsumi, M., et al. (2015), Utsumi, G. (1998) Alkaaki, A. (2019) Fukuda, H. (2016) Random effects model Heterogenery, <sup>7</sup> = 95%, <sup>4</sup> = 0.3127, <sup>7</sup> / <sub>20</sub> =	140	504	27.78	[14.48; 18.77] [16.76; 24.11]   [17.70; 12.85] [21.10] 28.08]   [17.63; 27.30] [14.55, 57.30]   [14.55, 57.30] [14.56, 57.30]   [14.56] [14.36]   [17.63; 27.30] [14.66]   [17.63; 27.30] [17.66]   [17.66] [14.66]   [16.66] [16.66]   [16.66] [16.66]   [16.66] [16.66]   [16.67] [16.66]   [16.67] [16.67]   [17.57] [16.76]   [17.54] [17.56]	-
Alkaaki, A(2019)	55	337	16.32	[12.54; 20.71]	
Fukuda, H. (2016) Random effects model	2331	24049	9.69 12.18	[9.32; 10.07] [9.41; 15.61]	
$\label{eq:starting} \begin{split} & \text{Heteropenery, } i^2 = 0.3492, j^*_{xx} = 0.0491, j^*_{xx} = 0$	840.96 (p	< 0.01)			
surgicalprocedure = Bowel surge	ry(smal	bowe 662	l, colon, an	(13.02: 18.71)	
Hoffman, T(2021).	197	865	22.77	[20.02; 25.72]	
Jesús Hernández-Navarrete, M.,	428	2393	10.14	[5.78; 16.17]	-
Limón, E (2014) Páramo-Zunzunegui, J., et al. (2021)	2826	13661	20.69	[20.01; 21.38]	
Tang, R(2001)	134	2809	4.77	[4.01; 5.62]	-
Bicudo-Salomão, A(2019).	73	234	31.20	[25.32; 37.56]	
Bislenghi, G., et al. (2021) Delgado-Miguel.C(2020)	35	287	12.20	[8.64; 16.55]	
Drake, T. M(2016)	472	7965	5.93	[5.42; 6.47]	
Uchino, M(2013)	108	405	26.67	[22.42; 31.26]	-
Lawson,E.H(2013)	2943	27011	12.63	[10.53; 11.27]	
Amri, R., et al. (2017) Blumetti, J., et al. (2007)	90 105	1481	6.08	[4.91; 7.42] [20.53: 28.89]	-
Mik, M (2016)	364	2240	16.25	[14.74; 17.84]	*
Mohan, S (2015)	530	5145	10.30	[9.48; 11.16]	
Random effects model	29	105	13.65	[19.34; 37.20] [10.62; 17.37]	
Jesús Hernández-Navarrete, M., Limón, E. (2014) Páramo-Zurzunegui, J., et al. (2021) Tang, R.(2001) 0014) Bicucio-Salomão, A(2019). Bisienghi, C., et al. (2021) Deigado-Miguel C(2020) Drake, T. M(2016) Hou, TY(2020). Uchino, M. (2016) Uchino, M. et al. 3009) Uchino, M. (2016) Amri, R., et al. (2007) Mik, M (2016) Fusco, S. D. B (2016) Fusco, S. D. B (2016) Fusco, S. D. B (2016) Tanner, J., et al. (2020) Tanner, J., et al. (2020) Random effects model Heimogunedy, Z. SUM, Z. 40440, Z <sup>2</sup> <sub>2</sub> , et aurricalprocedure = A Denendecto	1948.46 (	p = 0)			
surgicalprocedure = Appendecto GlobalSurg Collaborative(2018) Sanchez-Sanchan T, Coll (2017) Swart, O., et al. (2021) Gomila, A. (2018). Anandalwar, S. P. (2018) Hemmila, M. (2010). Xiao, Y. (2015). Telamosterword, = 2010, 2 = 10105, 2 =	my 520	4546	11.44		I
Kasatpibal, N., et al. (2006) Sánchez-Santana, T. et al. (2017)	26	2139	1.22	[10.53; 12.40] [0.80; 1.78] [3.37; 6.18] [18.50; 31.25] [16.85; 19.35] [8.42; 11.71] [5.84; 6.59] [5.84; 6.59] [3.90; 14.17]	
Swart, O., et al. (2021).	46	188	24.47	[18.50; 31.25]	
Gomila, A (2018). Anandalwar, S. P (2018)	669 133	3701	18.08	[16.85; 19.35]	*
Hemmila, M. R (2010) Xiao, Y (2015)	987	21475 16263	4.60	[4.32; 4.88] [5.84; 6.59]	
Random effects model Heterogeneity: $l^2 = 99\%$ , $z^2 = 1.0105$ , $\chi_7^2 =$		< 0.01	7.57	[3.90; 14.17] 🗢	
$\label{eq:surgicalprocedure = Gastric surg} \\ \mbox{Joing, S. J., et al. (2013)} \\ \mbox{Kim, E. S (2012)} \\ \mbox{Kim, J. H(2019)} \\ \mbox{Ruiz.Tovar, J(2013)} \\ \mbox{Random effects model} \\ \mbox{Heterogeneity: } l^2 = 74\%, r^2 = 0.1138, r_3^2 = 0.1$	71	2091	3.40	[2.66; 4.26] [3.44; 4.65] [4.64; 10.28] [1.57; 20.39] -	
Kim, E. S (2012) Kim, J. H(2019)	170	4238 353	7.08	[3.44; 4.65]	
Ruiz-Tovar, J(2013) Random effects model	3	40	7.50	[1.57; 20.39] - [3.19; 6.77] •	
Heterogeneity: $l^2 = 74\%$ , $\tau^2 = 0.1138$ , $\chi_3^2 =$	11.6 (p < 0	0.01)			
surgicalprocedure = Pancreatic s Dong, Z. M (2015) Lemke.M(2021) Funamizu, N., et al. (2020)	urgery 76	1384	5.49	[4.35: 6.83]	
Lemke.M(2021)	754	1384 3430 93	21.98	[20.61; 23.41]	•
			32.26 16.45	[4.35; 6.83] [20.61; 23.41] [22.93; 42.75] [5.41; 40.39]	
Heterogeneity $l^2 = 99\% r^2 = 1.1716 r^2 =$	169.13 (p	< 0.01)			
surgicalprocedure = Liver Transp Hellinger, W. C., et al. (2009)	lantatio	n 370	17.84	[14.07: 22 13]	
Hreńczuk, M., et al. (2020)	16	60 156	26.67	[16.07; 39.66]	
Hollenbeak, C. S (2001).	293	156	37.71	[34.29, 41.22]	
Aktas, A (2019) Random effects model	30	101	29.70 27.44	[14.07; 22.13] [16.07; 39.66] [20.14; 34.60] [34.29; 41.22] [21.02; 39.61] <b>[20.76; 35.31]</b>	-
Henrogenesity of the second se	46.64 (p <	0.01)			
Random effects model Heterogeneity: $l^2 = 99\%$ , $t^2 = 0.7010$ , $\chi^2_{70} =$ Test for subgroup differences: $\chi^2_7 = 79.81$ , d	12512.22	(p = 0)	10.91	[9.20; 12.91]	<del></del> .
Test for subgroup differences: $\chi_7^2 = 79.81$ , d	f = 7 (p < 0)	0.01)		0	20 40 60 80 100 Incidence of SSI
					madelice of oor

Figure S4: A meta-analysis of the studies that reported surgical site infection incidences by surgical procedure is shown. This figure indicates that there is a significant difference in the pooled incidences of surgical site infection among different surgical procedures (P<0.01).

Study	Cases	Total	Incidence	95% C.I.	
Algado-Sellés, N., et al. (2022)	52	484	10.74	[8.13; 13.85]	
Assawapalanggool, S(2016)	122	1600	7.62	[6.37; 9.04]	1 💼
Bediako-Bowan, A. A. A (2020).	19	91	20.88	[13.06; 30.67]	
de la Cuesta, R. S (2021)	9	60	15.00	[7.10; 26.57]	
Hoffman, T(2021).	99	424	23.35	[19.40; 27.67]	<b>*</b>
Hübner, M (2011)	188	904	20.80	[18.19; 23.59]	
Jeong, S. J., et al. (2013)	56	1078	5.19	[3.95; 6.69]	
Jesús Hernández-Navarrete, M.,	4	23	17.39	[4.95; 38.78]	
Kasatpibal, N., et al. (2006)	10	401	2.49	[1.20; 4.54]	<b>•</b>
Kim, E. S (2012)	67	941	7.12	[5.56; 8.95]	±
Lakoh, S., et al. (2022)	10	45	22.22	[11.20; 37.09]	
Mpogoro, F. J (2014)	10	56	17.86	[8.91; 30.40]	
Páramo-Zunzunegui, J., et al. (2021)	15	117	12.82	[7.36; 20.26]	
Tang, R(2001)	50	582	8.59	[6.44; 11.17]	
Wloch, C (2012).	25	289	8.65	[ 5.68; 12.50]	
Bislenghi, G., et al. (2021)	13	60	21.67	[12.07; 34.20]	
Gomila, A (2018).	289	1452	19.90	[17.88; 22.05]	-
Hou, TY(2020).	53	929	5.71	[ 4.30; 7.40]	· •
Opoien, H. K., et al. (2007)	13	68	19.12	[10.59; 30.47]	
Uchino, M(2013)	76	166	45.78	[38.04; 53.68]	
Amri, R., et al. (2017)	48	643	7.47	[5.56; 9.78]	
Chipko, J. (2017)	12	86	13.95	[7.42; 23.11]	
Tanner, J., et al. (2009)	5	17	29.41	[10.31; 55.96]	
Aktas, A (2019)	11	23	47.83	[26.82; 69.41]	
Random effects model			14.09	[10.50; 18.64]	1
Heterogeneity: $l^2 = 96\%$ , $\tau^2 = 0.6302$ , $\chi^2_{23} =$	527.64 (p	< 0.01		[10.00, 10.04]	
				1	0 20 40 60 80 100
					Incidence of SSI

Figure S5: A meta-analysis of studies that reported surgical site infection in operation time>T (long operation time) is shown. This figure indicates high incidences of surgical site infection in surgeries with prolonged operation times.

Study	Cases	Total	Incidence	95% 0	C.I.					
Algado-Sellés, N., et al. (2022)	58	1716	3.38	[2.58; 4.3	35] 🖿					
Assawapalanggool, S(2016)	171	3388	5.05	[4.33; 5.8	34]	la-per				
Bediako-Bowan, A. A. A (2020).	39	267	14.61	[10.60; 19.4	12]	+				
de la Cuesta, R. S (2021)	11	204	5.39	[2.72; 9.4	14]	ŀ				
Hoffman, T(2021).	98	441	22.22	[18.43; 26.4	10]					
Hübner, M (2011)	240	1489	16.12	[14.29; 18.0	09]	-+-				
Jeong, S. J., et al. (2013)	15	1013	1.48	[ 0.83; 2.4	13] 🕒					
Jesús Hernández-Navarrete, M.,	11	125		[4.48; 15.2						
Kasatpibal, N., et al. (2006)	16	1738	0.92	[0.53; 1.4	19] 💶					
Kim, E. S (2012)	103	3297	3.12	[2.56; 3.7	78] 🖪					
Lakoh, S., et al. (2022)	29	293	9.90	[6.73; 13.9	90]	+				
Mpogoro, F. J (2014)	24	289	8.30	[ 5.39; 12.1	10]	-				
Páramo-Zunzunegui, J., et al. (2021)	1	13	7.69	[0.19; 36.0	03] —					
Tang, R(2001)	84	2227	3.77	[ 3.02; 4.6	65] 🖪					
Wloch, C (2012).	354	3613	9.80	[8.85; 10.8	31]	+				
Bislenghi, G., et al. (2021)	22	227	9.69	[6.17; 14.3	31]	-				
Gomila, A (2018).	380	2249	16.90	[15.37; 18.5	51]	+-				
Hou, TY(2020).	81	2734	2.96	[2.36; 3.6	67] 🗖					
Opoien, H. K., et al. (2007)	16	237	6.75	[ 3.91; 10.7	73]	ŀ				
Uchino, M(2013)	32	239	13.39	[ 9.34; 18.3	37]					
Amri, R., et al. (2017)	42	838	5.01	[ 3.64; 6.7	71] 💻					
Chipko, J. (2017)	4	138	2.90	[ 0.80; 7.2	26] 🔳					
Tanner, J., et al. (2009)	24	88	27.27	[18.32; 37.8	31]		<u> </u>			
Aktas, A (2019)	19	78	24.36	[15.35; 35.4	40]					
Random effects model			7.24	[ 5.04; 10.3	30] 🖣	•				
Heterogeneity: $l^2 = 98\%$ , $\tau^2 = 0.8652$ , $\chi^2_{23} =$	1001.91 (	p < 0.0		72299974999	- r		I	1	1	
	90 L - 19 C -				0	20	40	60	80	100
						Ir	ncidend	e of S	SI	

Figure S6: The pooled incidence of surgical site infection in operation time<T (low operation time) is shown. This figure indicates low incidences of surgical site infection in surgeries with low operation times in abdominal surgeries.

Study	Cases	Total	Incidence	95% C.I.					
Algado-Sellés, N., et al. (2022)	57	1583	3.60	[2.74; 4.64]	+				
Assawapalanggool, S(2016)	94	3882	2.42	[1.96; 2.96]	+				
Bediako-Bowan, A. A. A (2020).	13	131	9.92	[5.39; 16.37]					
Bhangu, A (2018)	938	9922	9.45	[8.88; 10.05]	+				
de Oliveira, A. C (2006).	118	505	23.37	[19.74; 27.31]		-			
Emil, A (2015)	41	257	15.95	[11.70; 21.01]	-				
Geubbels, E., et al. (2006)	185	4560	4.06	[3.50; 4.67]	+				
Hübner, M (2011)	261	1691	15.43	[13.74; 17.25]	+-				
Jeong, S. J., et al. (2013)	71	2082	3.41	[2.67; 4.28]	+				
Kim, E. S (2012)	163	4194	3.89	[3.32; 4.52]					
Lakoh, S., et al. (2022)	22	307	7.17	[4.55; 10.65]					
Lijaemiro, H., et al. (2020)	14	140	10.00	[5.58; 16.21]	-				
Mpogoro, F. J (2014)	12	202	5.94	[3.11; 10.15]	-				
Tang, R(2001)	121	2749	4.40	[3.67; 5.24]	+				
Wang, Z. W(2019)	52	1103	4.71	[3.54; 6.14]	+				
Wloch, C (2012).	353	3683	9.58	[8.65; 10.58]	+				
Araki, T., et al. (2014).	30	177	16.95	[11.74; 23.30]		-			
Bislenghi, G., et al. (2021)	29	239	12.13	[8.28; 16.96]	-				
Hou, TY(2020).	94	3247	2.89	[2.35; 3.53]	+				
Li, Z., et al. (2021).	48	687	6.99	[5.20; 9.16]	+				
Uchino, M(2013)	47	245	19.18	[14.45; 24.68]		-			
Lawson, E.H(2013)	2102	19496	10.78	[10.35; 11.23]	+				
Alkaaki, A(2019)	41	313	13.10	[9.57; 17.35]					
Fukuda, H. (2016)	1857	21673	8.57	[8.20; 8.95]	<b>P</b>				
Random effects model			7.83	[ 6.00; 10.16]	•				
Heterogeneity: $l^2 = 98\%$ , $\tau^2 = 0.4891$ , $\gamma$	$\frac{2}{23} = 1129$	.44 (p < 0					1	1	
					0 20	40	60	80	100
						Incidence	ce of S	SI	

Figure S7: The pooled incidence of surgical site infection in clean or clean-contaminated abdominal surgeries is shown. This figure indicates low incidences of surgical site infection in surgeries with clean or clean-contaminated surgeries.

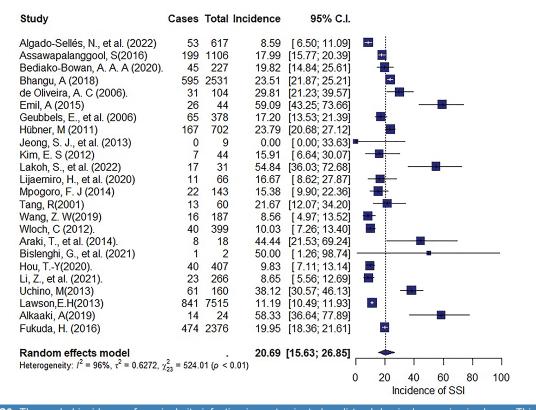


Figure S8: The pooled incidence of surgical site infection in contaminated or dirty abdominal surgeries is shown. This figure indicates high incidences of surgical site infection in surgeries with contaminated or dirty surgeries.

Study	Cases	Total In	cidence	95% C.I.	
Algado-Sellés, N., et al. (2022)	75	1812	4.14	[3.27; 5.16]	+
Assawapalanggool, S(2016)	276	4734	5.83	[5.18; 6.54]	+
Bhangu, A (2018)	1119	5753	19.45	[18.43; 20.50]	+
de Oliveira, A. C (2006).	133	557	23.88	[20.39; 27.64]	-
Geubbels, E., et al. (2006)	167	4136	4.04	[3.46; 4.68]	+
GlobalSurg Collaborative(2018)	324	4195	7.72	[6.93; 8.57]	- <b>4</b>
Hübner, M (2011)	254	1541	16.48	[14.66; 18.43]	+
Jeong, S. J., et al. (2013)	64	1996	3.21	[2.48; 4.08]	+
Jesús Hernández-Navarrete, M.,	2	59	3.39	[0.41; 11.71]	
Kim, E. S (2012)	153	3938	3.89	[3.30; 4.54]	+
Mpogoro, F. J (2014)	22	282	7.80	[4.95; 11.57]	· ·
Páramo-Zunzunegui, J., et al. (2021)	9	83	10.84	[ 5.08; 19.59]	
Tang, R(2001)	133	2794	4.76	[4.00; 5.62]	+
Wang, Z. W(2019)	52	998	5.21	[3.92; 6.78]	-
Wloch, C (2012).	310	3057	10.14	[ 9.09; 11.27]	
Araki, T., et al. (2014).	28	164	17.07	[11.65; 23.72]	
Bislenghi, G., et al. (2021)	14	157	8.92	[4.96; 14.51]	
Hou, TY(2020).	76	2530	3.00	[2.37; 3.75]	+
Kleeff, J., et al. (2015).	5	69	7.25	[2.39; 16.11]	
Li, Z., et al. (2021).	43	789	5.45	[3.97; 7.27]	<b></b>
Uchino, M(2013)	95	357	26.61	[22.10; 31.52]	
Kim, J. H(2019)	14	201	6.97	[3.86; 11.41]	
Lawson, E.H(2013)	1122	12087	9.28	[8.77; 9.81]	*
Alkaaki, A(2019)	29	279	10.39	[7.07; 14.59]	
Fukuda, H. (2016)		20577	8.92	[8.53; 9.32]	
Mik, M (2016)	167	1406		[10.23; 13.68]	
Tanner, J., et al. (2009)	17	65		[16.03; 38.54]	
Shree, R (2016)	140	2378		[4.98; 6.91]	
Aktas, A (2019)	7	22	31.82	[13.86; 54.87]	
Random effects model			8.70	[6.75; 11.14]	•
Heterogeneity: $l^2 = 98\%$ , $\tau^2 = 0.5255$ , $\chi^2_{28} =$	1746.94 (	o = 0)			
					0 20 40 60 80 100
					Incidence of SSI

Figure S9: The pooled incidence of surgical site infection in patients with ASA<3 is shown. This figure indicates low incidences of surgical site infection in patients with ASA<3 undergone abdominal surgeries.

Study	Cases	Total	Incidence	95% C.I.	
Algado-Sellés, N., et al. (2022)	35	388	9.02	[6.36; 12.32]	
Assawapalanggool, S(2016)	17	254	6.69	[3.95; 10.50]	<b>•</b>
Bhangu, A (2018)	371	2014	18.42	[16.75; 20.18]	+
de Oliveira, A. C (2006).	16	56	28.57	[17.30; 42.21]	
Geubbels, E., et al. (2006)	80	604	13.25	[10.64; 16.21]	<b></b>
GlobalSurg Collaborative(2018)	39	211	18.48	[13.49; 24.39]	-
Hübner, M (2011)	174	852	20.42	[17.76; 23.29]	
Jeong, S. J., et al. (2013)	7	95	7.37	[3.01; 14.59]	
Jesús Hernández-Navarrete, M.,	13	89	14.61	[8.01; 23.68]	- <b></b>
Kim, E. S (2012)	17	300	5.67	[3.34; 8.92]	-
Mpogoro, F. J (2014)	12	63	19.05	[10.25; 30.91]	
Páramo-Zunzunegui, J., et al. (2021)	7	47	14.89	[6.20; 28.31]	
Tang, R(2001)	1	15	6.67	[0.17; 31.95]	
Wang, Z. W(2019)	17	292	5.82	[3.43; 9.16]	<b></b>
Wloch, C (2012).	11	71	15.49	[8.00; 26.03]	-
Araki, T., et al. (2014).	10	31	32.26	[16.68; 51.37]	
Bislenghi, G., et al. (2021)	21	126		[10.62; 24.34]	
Hou, TY(2020).	58	1129	5.14	[3.92; 6.59]	+
Kleeff, J., et al. (2015).	2	24	8.33	[1.03; 27.00]	
Li, Z., et al. (2021).	28	164		[11.65; 23.72]	
Uchino, M(2013)	13	48		[15.28; 41.85]	
Kim, J. H(2019)	11	152		[3.67; 12.58]	-
Lawson, E.H(2013)	1821	14924		[11.68; 12.74]	
Alkaaki, A(2019)	26	58		[31.74: 58.46]	<b></b>
Fukuda, H. (2016)	496	3472		[13.14; 15.49]	÷
Mik, M (2016)	197	834		[20.78; 26.65]	
Tanner, J., et al. (2009)	12	40		[16.56; 46.53]	
Shree, R (2016)	36	352		[7.27; 13.88]	
Aktas, A (2019)	23	79		[19.43; 40.42]	
Random effects model			14.84	[11.88; 18.38]	•
Heterogeneity: $l^2 = 93\%$ , $\tau^2 = 0.4169$ , $\chi^2_{28} =$	382.82 (n	< 0.01)	14.04	[	
101010g0101, γ. 1 00 /0, γ 0.4100, γ.28	002.02 (p				0 20 40 60 80 100
					Incidence of SSI

Figure S10: The pooled incidence of surgical site infection in patients with ASA≥3 is shown. This figure indicates high incidences of surgical site infection in patients with ASA≥3 undergone abdominal surgeries.