

Table 2.7. Case-control studies of combined estrogen-progestogen oral contraceptives and ovarian cancer

Reference, country	Type of study	Relative risk (95% CI) ^a			
		No. of cases (age in years)	Ever use	Longest use	Duration (years)
Hildreth et al. (1981), USA	Hospital-based	62 (45–74)	0.5 (0.1–1.7)	NR	
Weiss et al. (1981a), USA	Population-based	112 (36–55)	0.6 (NR)	0.5 (0.2–1.3)	≥ 9
Willett et al. (1981), USA	Nested in a cohort	47 (< 60)	0.8 (0.4–1.5)	0.8 (0.3–2.1)	> 3
Cramer et al. (1982), USA	Population-based	144 (< 60)	0.4 (0.2–1.0)	0.6	> 5
Franceschi et al. (1982), Italy	Hospital-based	161 (19–69)	0.7 (0.4–1.1)	NR	
Rosenberg et al. (1982), USA	Hospital-based	136 (< 60)	0.6 (0.4–0.9)	0.3 (0.1–0.8)	≥ 5
Risch et al. (1983), USA	Population-based	284 (20–74)	[0.5] (NR)	NR	
Tzonou et al. (1984), Greece	Hospital-based	150 (NR)	0.4 (0.1–1.1)	NR	
CASH (1987b), USA	Population-based	492 (20–54)	0.6 (0.5–0.7)	0.2 (0.1–0.4)	≥ 10
Harlow et al. (1988), USA	Population-based	116 (20–79)	0.4 (0.2–0.9)	0.4 (0.2–1.0)	> 4
Wu et al. (1988), USA	Hospital- and population-based	299 (18–74)	0.7 (0.5–1.1)	0.4 (0.2–0.7)	> 3
Booth et al. (1989), United Kingdom	Hospital-based	235 (< 65)	0.5 (0.3–0.9)	0.1 (0.01–1.0)	> 10
Hartge et al. (1989), USA	Hospital-based	296 (20–79)	1.0 (0.7–1.7)	0.8 (0.4–1.5)	> 5
Shu et al. (1989), China	Population-based	229 (18–70)	1.8 (0.8–4.1)	1.9 (0.4–9.3)	> 5
WHO (1989a), 7 countries	Hospital-based	368 (< 62)	0.8 (0.6–1.0)	0.5 (0.3–1.0)	> 5
Parazzini et al. (1991a), Italy	Hospital-based	505 (22–59)	0.7 (0.5–1.0)	0.5 (0.3–0.9)	≥ 2

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Parazzini et al. (1991b), Italy	Hospital-based	91 (23–64)	0.3 (0.2–0.6)	0.2 (0.1–0.6)	≥ 2
Polychronopoulou et al. (1993), Greece	Hospital-based	189 (< 75)	0.8 (0.2–3.7)	NR	
Risch et al. (1994, 1996), Canada	Population-based	450 (35–79)	0.5 (0.4–0.7)	0.3 (0.2–0.6)	≥ 10
Rosenberg et al. (1994), USA	Hospital-based	441 (< 65)	0.8 (0.6–1.0)	0.5 (0.2–0.9)	≥ 10
Purdie et al. (1995), Australia	Population-based	824 (18–79)	0.5 (0.4–0.7)	0.3 (0.2–0.4)	≥ 1
Godard et al. (1998), Canada	Population-based	170 (20–84)	<i>P</i> = 0.038	0.33 (0.13–0.82)	> 10
Salazar-Martinez et al. (1999), Mexico	Hospital-based (outpatient controls)	84 (mean, 54.6)	0.4 (0.2–0.8)	0.4 (0.2–0.8)	> 1
Wittenberg et al. (1999), USA	Population-based	322 (20–79)	0.9 (0.4–2.1) ^b 0.8 (0.6–1.3) ^c	0.4 (0.1–1.4) ^b 0.6 (0.4–1.0) ^c	≥ 5
Beard et al. (2000), USA	Population-based	103 (15–85+)	1.1 (0.6–2.3)	0.8 (0.4–1.1)	≥ 0.5
Cramer et al. (2000), USA	Population-based	563 (mean, 51)	0.7 (0.5–0.8)	–	–
Greggi et al. (2000), Italy	Hospital-based	440 (≤ 80)	0.4 (0.3–0.6)	0.3 (0.2–0.5)	≥ 2
Ness et al. (2000), USA	Population-based	767 (< 70)	0.6 (0.3–0.8)	0.3 (0.1–0.5)	≥ 10
Chiaffarino et al. (2001), Italy	Hospital-based	1031 (< 80)	0.9 (0.7–1.2)	0.5 (0.3–0.9)	≥ 5
Riman et al. (2001), Sweden	Population-based	193 (50–74) borderline	1.2 (0.9–1.8)	1.2 (0.6–2.1)	≥ 10
Royar et al. (2001), Germany	Population-based	282 (< 75)	0.5 (0.3–0.7)	0.4 (0.3–0.6)	> 5
Riman et al. (2002), Sweden	Population-based	655 (50–74)	0.7 (0.6–0.9)	0.4 (0.2–0.6)	≥ 10

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Schildkraut et al. (2002), USA	Population-based	390 (20–54)	1.0 referent ^d 0.0 ^e 2.1 (1.2–3.7) ^f 1.6 (0.9–3.0) ^g 2.9 (1.8–4.5) ^h		
Tung et al. (2003), USA (Hawaii and California)	Population-based	558 (mean, borderline, 48; invasive, 58)	0.6 (0.4–0.8)	0.4 (0.3–0.6)	> 5
Mills et al. (2004), USA	Population-based	256 (mean, 56.6)		0.4 (0.2–0.7)	> 10
Pike et al. (2004), USA	Population-based	477 (18–74)		0.5 (0.2–0.8)	≥ 10
Huusom et al. (2006), Denmark	Population-based	235 (35–79), borderline	0.81 (0.56–1.16)	0.77 (0.45–1.34)	≥ 10
Soegaard et al. (2007), Denmark	Population-based	554 (35–79)	0.67 (0.53–0.85)	0.40 (0.26–0.60)	≥ 10
Lurie et al. (2007), Hawaii	Population-based	745 (≥ 18)	0.51 (0.26–0.98)	-	-
Moorman et al. (2008) North Carolina, USA	Population-based	314 (≥ 20 and premenopausal)	0.5 (0.3–0.8)	0.3 (0.2–0.6)	> 10
		582 (≤ 74 and postmenopausal)	0.8 (0.6–1.1)	0.9 (0.6–1.5)	> 10
Pooled analyses					
Franceschi et al. (1991a), Greece, Italy, United Kingdom	Three hospital-based studies	971 (< 65)	0.6 (0.4–0.8)	0.4 (0.2–0.7)	≥ 5
Harris et al. (1992), USA	Pooled analysis of 12 US population- and hospital-based case-control studies	327 (NR)	0.8 (0.6–1.1)	0.6 (0.4–0.9)	> 5

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Whittemore et al. (1992), USA	Same pooled analysis as Harris et al. (1992)	2197 (NR)	0.7 (0.6–0.8)	0.3 (0.2–0.4)	≥ 6
John et al. (1993), USA	Pooled analysis of 7 of the 12 studies in the pooled analysis of Whitte-more et al. (1992)	110 (mean, invasive, 53.3; borderline, 37.1)	0.7 (0.4–1.2)	0.6 (0.2–1.6)	≥ 6
Bosetti et al. (2002), Greece, Italy, United Kingdom	Re-analysis of 6 studies	2768 (< 40–69)	0.7 (0.6–0.8)	0.4 (0.3–0.6)	≥ 5
Beral et al. (2008), Multiple countries	Pooled analysis of 45 studies	23 357 (mean, 56 years)	0.73 (0.70–0.76)	0.42 (0.36–0.49)	≥ 15

CI, confidence interval; NR, not reported

^a Whenever available

^b Mucinous

^c Non-mucinous

^d Potency progestogen/estrogen high/high

^e Potency progestogen/estrogen high/low

^f Potency progestogen/estrogen low/high

^h Non-users, potency progestogen/estrogen low/low