Supplementary Table SIV **Assessment of study quality against Newcastle-Ottawa criteria for case-control studies; explanation of categorization is presented in supplementary material alongside its corresponding number.**

Author	Year	Adequacy of case definition	Representativeness of cases	Selection of controls	Definition of controls	Comparability of cases and controls	Ascertainment of exposure	Same ascertainment for cases and controls	Non-response rate
Banhidy *et al.*	2007	Yes, with record linkage	Consecutive or obviously representative series of cases	Community controls	No history of disease[a]	Cases and controls comparable (controls for child's age and other factors)	Secure record (antenatal logbook), written self-report and interview not blinded to case/control	Yes	Rate different (Response rate: cases 96.3%/ controls 83%)
Berkowitz *et al.*	1996	Yes, with independent validation	Consecutive or obviously representative series of cases	Hospital controls[b]	No history of disease	Cases and controls comparable (study controls child's age and other factors)	Written self-report[c]	Yes	Rate different and no designation
Davies *et al.*	1986	Yes, with independent validation	Consecutive or obviously representative series of cases	Hospital controls	No history of disease	Study controls for child's age	Interview not blinded to case/ control status and medical record review	Yes	Same rate for both groups (Response rate: cases 77%/controls 61%)
Mori *et al.*	1992	Yes, with independent validation	Consecutive or obviously representative series of cases	Hospital controls	No history of disease	Cases and controls comparable (study controls for child's age and other factors)	Interview not blinded to case/ control status (cases), and written self-report (controls)	Yes[d]	Rate different (Response rate: cases 75.5%/ controls 57%)
Wagner-Mahler *et al.*	2011	Yes, with independent validation	Consecutive or obviously representative series of cases	Hospital controls	No history of disease	Cases and controls comparable (study controls for child's age other factors)	Written self-report	Yes	No designation[e]

[a]Study also included a second control group with malformations, but comparisons between cases and this second control group were not included in the current meta-analysis.
[b]Cases were those diagnosed with cryptorchidism within a hospital setting, while controls were the next non-cryptorchid-at-birth male who was delivered after a cryptorchid-at-birth infant. We have thus designated the latter as 'hospitalised' controls, since they could only have been selected as controls if they were born at the same hospital as the cases.
[c]The authors state that 'Information on potential risk factors for cryptorchidism was obtained from a standardized structured questionnaire administered to the women during their post-partum hospital stay.'
[d]Exposure status was determined via self-report for both cases and controls, although cases were interviewed in-person and controls completed a self-administered questionnaire. It is plausible that this differential data collection practice may have introduced information bias—for example, those answering in-person may have been more (or less) likely to declare use of medication during pregnancy—given the general lack of stigma regarding use of the most common forms of analgesia, it would seem unlikely that this would have biased the results in a meaningful way.
[e]No response rate is offered with respect to the cohort study within which the case-control study was nested. The authors state: 'The parents of the cryptorchid and control boys were invited to participate, along with their son, in a prospective study. If they agreed, they signed a second consent form and, during the hospital stay after birth, both parents filled in a detailed questionnaire that collected information on their auxological characteristics, family status and family and personal medical history.'