Supplementary table 1: Chracteristic tables

Table 1: Characteristics of included studies for women with pregestational and/or gestational diabetes mellitus

Author, year	Study design	N (treatment, control)	Study period	Location	Inclusion criteria	Exclusion criteria	PGDM or GDM	Antenatal corticosteroid course			
								Drug	Dose (mg)	Interval (h)	Repeat ACS
Battarbee et al., 2020	Retrospective cohort	Pregnant women 510 (439, 71) Infants 615 (536, 79)	2008–2011	USA	Women giving birth at GA 23–33weeks	Stillborn, nonresuscitated cases	PGDM or GDM	NS	NS	NS	Yes
Cassimatis et al., 2020	Retrospective cohort	Pregnant women=infants 54 (18, 36)	2014–2017	USA	Women giving birth in late preterm	Congenital anomalies, multiple pregnancy	PGDM	Beta	12	24	No
Krispin et al., 2018	Retrospective cohort	Pregnant women=infants 161 (47, 114) [1)]	2012–2016	Israel	Women giving birth in late preterm period	Preterm PROM, multiple gestations, PGDM, fetal anomaly, fetal chromosomal abnormalities	GDM	Beta	12	24	No

*ACS: Antenatal corticosteroid, Beta: Betamethasone, CS: Cesarean section, Dex: Dexamethasone, GA: Gestational age, GDM: Gestational diabetes mellitus, NS: Not stated, PGDM: Pregestational diabetes mellitus, PROM: Premature rupture of the membranes

1) This study included 2262 women who gave birth in the late preterm and term period. Data were extracted and reported for women in the late-preterm delivery group (n = 161) only.

Table 2: Characteristics of included studies for women undergoing elective cesarean section in the late preterm period

Author, year	Study design	N (treatment, control)	Study period	Location	Inclusion criteria	Exclusion criteria	Antenatal corticosteroid course			
							Drug	Dose (mg)	Interval (h)	Repeat ACS
de la Huerga et al., 2019	Retrospective cohort	Pregnant women=infants 40 (30, 10)	2013–2017	Spain	Women undergoing elective CS between 35 weeks 0 days and 36 weeks 6 days	Congenital anomalies, transferred to other hospitals	Beta	NS	NS	NS
Kirshenbaum et al., 2018	Case-control	Pregnant women=infants 165 (58, 107)	2011–2013	Israel	Women undergoing elective CS between GA 34 weeks 0 days and 37 weeks 0 days	Multiple pregnancy, congenital anomalies, chromosomal abnormalities, chorioamnionitis	Beta	12	24	No

Gyamfi-Bannerman et al., 2016[a)]	RCT	Pregnant women=infants 2827 (1427, 1400)	2010-2015	USA	Women with a singleton pregnancy at 34 weeks 0 days to 36 weeks 5 days of gestation, who were high probability of delivery in the late preterm period	Received ACS previously during the pregnancy, Expected to deliver in less than 12 hours for any reasons, Lack of gestational dating based on ultrasonography before GA 32 weeks, Lack of gestational dating based on last menstrual period before GA 24 weeks	Beta	12	24	No

*ACS: Antenatal corticosteroid, Beta: Betamethasone, CS: Cesarean section, GA: Gestational age, NS: Not stated, RCT: Randomized controlled trial
[a)]Gyamfi-Bannerman (2016) did not provide the data on our review outcomes.

Table 3-a: Characteristics of included studies for women with chorioamnionitis (histological or clinical)

Author, year	Study design	N (treatment, control)	Study period	Location	Inclusion criteria	Exclusion criteria	HC CC	Antenatal corticosteroid course			
								Drug	Dose (mg)	Interval (h)	Repeat ACS
Ryu et al., 2019	Retrospective cohort	Pregnant women=infants 109 (97, 12)	2007–2014	Republic of Korea	Women giving birth between GA 23weeks 0 days and 33 weeks 6 days	Multiple gestations, congenital anomalies, SGA or LGA, transferred to other hospitals, incomplete information	HC	Beta /Dex	NS	NS	No
Ahn et al., 2012	Prospective cohort	Pregnant women no data Infants 88 (52, 36)	2005–2010	Republic of Korea	Women giving birth at GA < 34 weeks	Congenital anomalies, transferred from other hospitals	HC	Dex	5	12	No
Been et al., 2009	Prospective cohort	Pregnant women=infants HC121 (89, 32) CC93 (64,29)	2001–2003	Netherlands	Women giving birth at GA < 32 weeks	Congenital anomalies	HC CC	Beta	12	24	No
Goldernberg et al., 2006	Retrospective cohort	Pregnant women=infants HC218 (182, 36) CC93 (64, 29)	1996–2001	USA	Women giving birth between GA 23 weeks 0 days and 32 weeks 6 days	Multiple gestations	HC CC	Beta	12	24	Yes
Dempsey et al., 2005	Retrospective cohort	Pregnant women=infants 130 (88, 42)	1989–1999	USA	Women giving birth at GA < 30 weeks	Multiple gestations	HC	Beta	12	24	NS
Foix-L'Helias et al., 2005	Retrospective cohort	Pregnant women=infants 97 (45, 52)	1993–1996	France	Women giving birth between GA 24 weeks 0 days and 31 weeks 6 days	Multiple gestations	CC	Beta /Dex	NS	NS	Yes
Baud et al., 2000	Retrospective cohort	Pregnant women=infants 170 (60, 110)	1993–1997	France	Women giving birth at GA < 33 weeks	Multiple gestations, severe DM	CC	Beta /Dex	NS	NS	Yes
Elimian et al., 2000	Retrospective cohort	Pregnant women=infants 527 (169, 358)	1990–1997	USA	Birth weight: 500–1750 g	CC	HC	Beta	12	24	Yes

*ACS: Antenatal corticosteroid, Beta: Betamethasone, CC: Clinical chorioamnionitis, Dex: Dexamethasone, DM: Diabetes mellitus, GA: Gestational age, HC: Histological chorioamnionitis, LGA: Large for gestational age, SGA: Small for gestational age, NS: Not stated

Table 3-b: Diagnostic criteria on histological and clinical chorioamnionitis from individual studies

Author, year	HC, CC	Diagnostic criteria
Ryu et al., 2019	HC	Salafia et al.*2
Ahn et al., 2012	HC	No written diagnostic criteria
Been et al., 2009	HC/ CC	HC: Redline et al. *3 CC: maternal temperature greater than 38.0°C in the absence of another focus for infection, with two or more of the following criteria: uterine tenderness, malodorous vaginal discharge, maternal leucocytosis (WBC>15000cells/μL), raised serum C-reactive protein, maternal tachycardia (>100 beats/min), and fetal tachycardia (>160 beats/min)
Goldernberg et al., 2006	HC/ CC	HC: Redline et al.*3, Faye-Petersen et al.*4, Bendon et al.*5 CC: diagnosed by an obstetrician, usually for a combination of fever, abdominal pain, and elevated white count
Dempsey et al., 2005	HC	HC: the presence of abundant polymorphonuclear leukocytes in the chorion and amnion
Foix-L'Helias et al., 2005	CC	CC: defined by the association of preterm labor and at least two of the following criteria: a) maternal temperature greater than 38°C, b) maternal serum C reactive protein concentration >20mg/l, c) positive bacterial culture of amniotic fluid (amniocentesis), d) documented early onset neonatal sepsis
Baud et al., 2000	CC	CC: defined by the association of preterm labor and at least two pre and/ or intrapartum criteria of maternal fever (temperature > 38°C on at least two occasions); blood inflammatory response (C-reactive protein plasma concentration > 40 ml/L or white blood count > 18000/mm3; or bacteriological evidence of infection in amnionic fluid obtained by amniocentesis
Elimian et al., 2000	HC	HC: Salafia et al. *2

*1 HC: Histological chorioamnionitis ,CC: Clinical chorioamnionitis

*2 Salafia CM, Weigl C, Silberman L. The prevalence and distribution of acute placental inflammation in uncomplicated term pregnancies. *Obstet Gynecol*. 1989;73(3 Pt 1):383-389.
*3 Redline RW, Faye-Petersen O, Heller D, et al. Amniotic infection syndrome: nosology and reproducibility of placental reaction patterns. Pediatr Dev Pathol. 2003;6(5):435-448. doi:10.1007/s10024-003-7070-y.
*4 Faye-Petersen O, Heller DS, Joshi VV. Handbook of Placental Pathology. Oxford: Taylor and Francis Medical Publishers; 2005. 142-52.
*5 Bendon RW, Faye-Petersen O, Pavlova Z, et al. Histologic features of chorioamnion membrane rupture: development of methodology. Pediatr Pathol Lab Med. 1997;17(1):27-42.

Table 4-a: Characteristics of included studies for women with growth-restricted fetuses and/or small for gestational age infants

Author, year	Study design	N (treatment, control)	Study period	Location	Inclusion criteria	Exclusion criteria	FGR SGA	Antenatal corticosteroid course			
								Drug	Dose (mg)	Interval (h)	Repeat ACS
Bitar et al., 2020	Retrospective cohort	Pregnant women=infants 247 (136, 111)	2015–2019	USA	Women giving birth between GA 34 weeks 0 days and 36 weeks 6 days	Multiple gestations, mother age ≥ 18 years	SGA or FGR	Beta	NS	NS	NS
Cartwright et al., 2019	Retrospective cohort	Pregnant women 216 (118, 98) Infants 261 (139, 122)	1998–2004	Australia New Zealand	Women giving birth at GA < 32 weeks, single, twin, and triplet pregnancy	Chorioamnionitis requiring urgent delivery, labor at the second stage, mature fetal lung development, and further steroid therapy	SGA or FGR	Beta	13.8	NS	Yes
Kim WJ et al., 2018	Retrospective cohort	Pregnant women=infants 82 (45, 37)	2009–2016	Republic of Korea	Women giving birth between GA 29 weeks 0 days and 34 weeks 6 days	Multiple gestations, still birth, major congenital abnormality, ACS administration within 24 h before births, ACS administration >7 days before birth	SGA	Dex	5	12	NS
Kim YJ et al., 2018	Retrospective cohort	Pregnant women=infants 91 (83, 8)	2007–2014	Republic of Korea	Women giving birth between GA 23 weeks 0 days and 33 weeks 6 days	Multiple gestations, major congenital abnormality, fetal hydrops, incomplete information, LGA, repeated ACS, transfer to other hospitals, SGA without fetal umbilical artery Doppler abnormalities	FGR or SGA	Beta/ Dex	NS	24/ 12	No
Riskin-Mashiah et al., 2018	Retrospective cohort	Pregnant women=infants 784 (585,199)	1995–2012	Israel	Women giving birth to twins between GA 24 weeks 0 days and 31 weeks 6 days	Congenital anomalies	SGA	NS	NS	NS	NS
Feng et al., 2017	Retrospective cohort	Pregnant women No data Infants 602 (325, 277)	2013–2014	China	Women giving birth between GA 24 weeks 0 days and 34 weeks 6 days	Major congenital abnormality, inherited metabolic disease	SGA	Beta/ Dex	12/ 5–6	24/ 12	No
Riskin-Mashiah et al., 2016	Retrospective cohort	Pregnant women=infants 1771 (1246, 525)	1995–2012	Israel	Women giving birth between GA 24 weeks 0 days and 31 weeks 6 days	Multiple gestations, congenital malformation, incomplete data	SGA	NS	NS	NS	NS
Ishikawa et al., 2015	Retrospective cohort	Pregnant women=infants 1929 (719, 1210)	2003–2007	Japan	Birth weight < 1500 g	Multiple gestations, Women giving birth ≥34 weeks, major congenital malformation, incomplete information, out-of-hospital birth	SGA	NS	NS	NS	NS
Mitsiakos et al., 2013	Retrospective cohort	Pregnant women=infants 149 (87, 62)	NS	Canada	Women giving birth between GA 24 weeks 0 days and 31 weeks 6 days	Multiple gestations, congenital anomalies	SGA	Beta	12	24	No

van Stralen et al, 2009	Retrospective cohort	Pregnant women=infants 88 (54,34)	2001–2005	Netherlands	Birth weight < 1500 g	Multiple gestations, major congenital malformation or infection, incomplete information	FGR	Beta	11.4	24	NS
Torrance et al., 2007	Retrospective cohort	Pregnant women 165 (146, 19) FGR140 (112,28), SGA165 (146, 19)	1999–2003	Netherlands	Women giving birth at GA < 34 weeks	Congenital, chromosomal or syndromic abnormalities	SGA	Beta	12	24	NS
Foix-L'Helias et al, 2005	Retrospective cohort	Pregnant women No data Infants 151 (96,55)	1993–1996	France	Women giving birth between GA 24 weeks 0 days and 31 weeks 6 days	NS	SGA	NS	NS	NS	NS
Schaap et al, 2001	Case-control	Pregnant women=infants 124 (62,62)	1984–1991	Netherlands	Women giving birth between GA 26 weeks 0 days and 31 weeks 6 days	ACS < 24 h before delivery, fetal death or fetal distress at admission to the hospital, abruptio placentae, lethal congenital abnormalities or infections, multiple gestations	FGR	Beta	12.5	24	NS
Bernstein et al, 2000 *1	Retrospective cohort	Pregnant women=infants 1258 (703,555)	1991–1996	USA, Canada	Women giving birth between GA 25 weeks 0 days and 30 weeks 6 days, white and African-American infants	Multiple gestations, major anomalies	SGA	NS	NS	NS	NS
Elimian et al, 1999	Retrospective cohort	Pregnant women No data Infants 220 (63,157)	1990–1997	USA	Birth weight ≤ 1750 g	NS	SGA	Beta	12	24	Yes
Ley et al, 1997	Retrospective cohort	Pregnant women No data Infants 234 (117, 117)	1984–1985	Sweden	Women giving birth at GA < 33 weeks	NS	SGA	NS	NS	NS	NS
Spinillo et al, 1995	Prospective cohort	Pregnant women No data Infants 96 (32,64)	1988–1993	Italy	Women giving birth between GA 24 weeks 0 days and 34 weeks 6 days, indetermined or immature lecithin/sphingomyelin ratio, planned delivery with medication complications, liveborn	Congenital anomalies	SGA	Beta/Dex	12/ 12	NS	NS
Lenardo et al, 1990	Retrospective cohort	Pregnant women=infants 72 (15,57)	NS	Italy	Women giving birth at GA ≤ 35 weeks	Twin gestations	SGA	Beta	12	24	NS

*ACS: Antenatal corticosteroid, Beta: Betamethasone, Dex: Dexamethasone, FGR: Fetal growth restriction, GA: Gestational age, LGA: Large for gestational age, SGA: Small for gestational age, NS: Not stated

*1: The data was obtained through personal communication.

Table 4-b: Diagnostic criteria on fetal growth restriction (FGR) from individual studies

Author, year	Diagnostic criteria on FGR
Bitar et al., 2020	Identified by International Classification of Diseases, Tenth Revision (ICD-10) codes..
Cartwright et al., 2019	Defined a priori as one or more of the following: obstetric diagnosis of FGR at trial entry; cesarean delivery for FGR; or customized birth weight of no greater than the third centile (GROW, version 6.7.8.3; Perinatal Institute).
Kim YJ et al., 2018	Defined as any fetal growth restriction (estimated fetal weight <10th percentile) documented from serial maternal medical records or a birth weight of less than the 10th percebtile based on the growth curve of Olsen et al. [*1]with absent or reverse umbilical artery end-diastolic flow in the fetal Doppler studies.
van Stralen et al, 2009	Defined id at least one measurement of the U/C ratio was higher than 0.725.[*2] U:umbilical artery, C:middle cerebaral artery
Schaap et al, 2001	Diagnosed by fundal height measurement and by sonographic fetal biometry. The FGR was due to placental dysfunction, as confirmed by pathological examination of placenta.

*1 Olsen IE, Groveman SA, Lawson ML, Clark RH, Zemel BS. New intrauterine growth curves based on United States data. Pediatrics. 2010;125(2):e214-e224. doi:10.1542/peds.2009-0913
*2 Scherjon SA, Smolders-DeHaas H, Kok JH, Zondervan HA. The "brain-sparing" effect: antenatal cerebral Doppler findings in relation to neurologic outcome in very preterm infants. Am J Obstet Gynecol. 1993;169(1):169-175. doi:10.1016/0002-9378(93)90156-d