

Annex 1: Features of included studies

Author	No. of pregnant patients	No. of neonates	Gestational age at the diagnosis of COVID-19	Mode of delivery	Specimens tested	Number of positive tests (real-time polymerase chain)
Chen et al (6)	9	9	3rd trimester	Caesarian section	Amniotic fluid, cord blood, neonatal throat swab and breast milk	None
Fan et al (7)	2	2	3rd trimester	Caesarian section	Neonatal nasopharyngeal swab, serum , amniotic fluid, breast milk, placental tissues, vaginal swab	None
Liao et al (8)	1	1	3rd trimester (35 weeks)	Termination	Neonatal serum and anal swab, amniotic fluid, neonatal throat swab and breast milk	None
Liu et al (9)	19	19	3rd trimester	Cesarean section(18) vaginal delivery (1)	Neonatal throat swab, gastric fluid, urine and feces swab, amniotic fluid, umbilical cord blood, breast milk	One throat false positive , repeated sample negative
Zhu et al (3)	9	9	3rd trimester	Caesarian section	Neonatal pharyngeal swab	None
Lee et al (10)	1	1	3rd trimester	Caesarian section	Neonatal pharyngeal swab	None
Wang et al (11)	1	1	3rd trimester	Caesarian section	Cord blood, placental specimen, breast milk, neonatal oropharyngeal swabs	Neonatal oropharyngeal swab(1)
Peng et al (12)	1	1	3rd trimester (35 weeks)	Caesarian section	Neonatal throat swab, anal swab, serum, and urine , mother's amniotic fluid, vaginal secretions,	None

					placenta, cord blood, serum and breast milk	
Hu et al (13)	7	7	3rd trimester	Vaginal delivery (1) Caesarian section (6)	Neonatal throat swab, blood, feces, and urine, amniotic fluid	Neonatal throat swab (1)
Yan et al (14)	116	86	<13 w + 6 days(4) 14w - 27 w(6) 28 w+ 36 w (20) ≥37w (76)	Cesarean section (85) Vaginal delivery (14)	Amniotic fluid, cord blood, neonatal pharyngeal swab samples	None
Penfield et al (15)	32	32	3rd trimester	Cesarean section	Placental/membran swab, neonatal swab	Placental/memb ran swab (3)
Wang et al (16)	1	1	3rd trimester (30 week)	Cesarean section	Amniotic fluid, placenta, umbilical cord blood, gastric juice and throat swabs of the infant	None
Yu et al (17)	7	7	3rd trimester	Cesarean section	Placenta and cord blood neonatal throat swab	Neonatal throat swab (1)
Lu et al (18)	1	1	3rd trimester	Cesarean section	Neonatal nasopharyngeal swab and blood	None
Alzamora et al (19)	1	1	3rd trimester (33 week)	Cesarean section	Neonatal nasopharyngeal swab,serum IgG and Ig M	Neonatal nasopharyngeal swab (1)
Zeng et al (20)	33	33	3rd trimester	Cesarean section	Neonatal nasopharyngeal swab, anal swab	Neonatal nasopharyngeal swab (3)
Xiong et al (21)	1	1	3rd trimester (33 weeks 1 day)	Vaginal delivery	Maternal cervical secretion, maternal rectal swab, breast milk, amniotic fluid, neonatal throat swab, rectal swab and serology	None

Dong et al (22)	1	1	3rd trimester	Cesarean section	Nasopharyngeal swab,, neonatal samples Ig G, Ig M,breast milk, vaginal secretions	SARS-CoV-2 IgG and Ig M serology of neonate (1)
Zeng et al (23)	6	6	3rd trimester	Cesarean section	Neonatal throat swabs and blood samples, neonatal samples Ig G, Ig M	SARS-CoV-2 IgG and Ig M serology of neonate (2)
GraB et al(24)	2	2	3rd trimester	-	Neonatal oropharyngeal and nasopharyngeal swab, breast milk	Neonatal swab (1) Breast milk (1)
Shanes et al (25)	16	15	2nd trimester (1) 3rd trimester (15)	-	Neonatal nasopharyngeal and throat swab, placenta	None
Li et al (26)	16	17	3rd trimester	Cesarian section (14)	Neonatal throat swab	None
Pataane et al (27)	22	22	3rd trimester	Cesarian section	Neonatal nasopharyngeal swab, placenta	Neonatal nasopharyngeal swab (2) Placenta (2)
Hosier at al (28)	1	1	2nd trimester	Cesarian section	Placenta, umbilical cord, fetal lungs, heart kidney tissues	Placenta(1)
Baergen et al (29)	20	20	3rd trimester	Cesarian section (5) Vaginal Delivery (15)	Infant throat swab	None
Mulvey et al (30)	5	5	3rd trimester	Cesarian section(1) Vaginal Delivery(4)	Placenta	None
Salvatori et al (31)	2	2	3rd trimester	-	Neonatal nasopharyngeal swab, breast milk	None
Li et al (32)	3	3	3rd trimester	Cesarian Section	Breastmilk, vaginal mucus, placenta, umbilical cord, plasma	None

					serum, oropharyngeal swab	
Chen S et al (33)	5	5	3rd trimester	Vaginal Delivery (3) Cesarean section(2)	Oropharyngeal swab	none
Breslin et al (34)	2	2	3rd trimester	Cesarean section	Oropharyngeal swab	none
Zambrona et al (35)	1	1	3rd trimester (32 week of gestation)	Vaginal delivery	Nasopharyngeal and blood samples	none
Chen Y et al (36)	4	4	3rd trimester	Vaginal delivery (1)	Neonatal throat swab (3)	none
Li Y et al (37)	1	1	3rd trimester	Cesarian Section	Serum, urine, feces, amniotic fluid, umbilical cord blood, placenta, and breast milk, oropharyngeal swab	none
Baud et al (38)	1	1	2nd trimester (19 weeks)	Vaginal delivery	Swabs from the axillae, mouth, meconium, and fetal blood, fetal lung, liver, and thymus biopsies	Placental swabs and biopsies (1)
Xu L et al (39)	5	5	3rd trimester	Cesarian Section (4) Vaginal delivery(1)	Neonatal throat swab	none
Qiancheng et al (40)	28	23	First trimester (3) Second trimester (1) Third trimester (24)	Cesarian Section (17) Vaginal delivery (5) Medical abortion (4)	Neonatal throat swab	none
Ferrazzi et al (41)	42	42	3rd trimester	Vaginal delivery (24) Cesarian Section (18)	Throat swab	Throat swab (3)

Cao D et al (42)	10	11	3rd trimester	Cesarian Section (8) Vaginal delivery (2)	Throat swab (5 neonate)	none
Yu et al (43)	2	2	Second trimester	Amniocentesis	Amniotic fluid serology and PCR	none
Lyra et al (44)	1	1	3rd trimester	Cesarian Section	Nasal and oropharyngeal swabs	none
Zamanyan et al (45)	1	1	3rd trimester (32 weeks)	Cesarian Section	Umbilical cord blood and neonatal nasal and throat swab, amniotic fluid	Amniotic fluid (1) neonate's nasal and throat swab samples(1)second test
Chen L et al (46)	118	70	3rd trimester	Cesarian Section (63) Vaginal delivery (5)	Throat swab (8) Breast milk(3)	none
Carosso et al (47)	1	1	3rd trimester	Vaginal delivery	Maternal rectal and stool swabs, neonatal nasopharyngeal swab	Maternal rectal and stool swabs, neonatal nasopharyngeal swab
Yang et al (48)	55	57	3rd trimester	Vaginal delivery (16) Cesarian Section (39)	Throat swab (20 neonate)	none
Yang P et al(49)	7	7	3rd trimester	Cesarian Section	Pharyngeal swab(6) Amniotic fluid and umbilical cord blood (4)	none
Khan et al (50)	17	17	3rd trimester	Cesarian Section	Cord blood and neonatal throat swab	none
Tam et al (51)	1 mother	1 (8 month old son)	-	-	Oro/nasopharyngeal swab Breast milk	Oro/nasopharyngeal swab (1) Breast milk(1)
Pereira et al (52)	60	23	3rd trimester	Cesarian Section (5)	Nasopharyngeal swabs placental tissue(6)	none

				Instrumental delivery (4) Vaginal Delivery (14)		
Zeng Y et al (53)	16	16	3rd trimester	Cesarian Section (12) Vaginal delivery (4)	Throat swab	none
Kirtsman et al (54)	1	1	3rd trimester	Cesarian Section	Nasopharyngeal swabs,stool, plasma, placenta and breast milk	Nasopharyngeal swabs,stool, placenta and breast milk