



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

2 May 2019
EMA/249779/2019
Information Management Division

Use of ondansetron in pregnant female patients in the IMS Disease Analyzer databases in France and Germany

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Background

A possible association between ondansetron exposure in the first trimester and cardiac septal defects and facial clefts has been discussed at PRAC, which could result in labelling changes.

This aim of this study is to identify use of ondansetron in women during pregnancy in France and Germany as identified in the IMS Disease Analyzer (DA) databases. Due to concern that ondansetron may be increasingly used for hyperemesis gravidarum a further aim is to study the yearly proportion of women with a diagnosis of excessive vomiting of pregnancy treated with ondansetron between 2005 and 2018.

Methods

In the IMS DA databases it is not possible to identify mother-child pairs. Use during pregnancy instead needs to be identified on the basis of a diagnosis code suggestive of pregnancy, and then linking this diagnosis in time to a prescription of a drug of interest.

The following ICD 10 diagnoses codes are considered to represent ongoing or completed pregnancy:

- O00-O94 (Pregnancy, childbirth and the puerperium)
- Z32.1 (Pregnancy, confirmed)
- Z33 (Pregnancy state, incidental)
- Z34 (Supervision of normal pregnancy)
- Z35 (Supervision of high-risk pregnancy)
- Z36 (Antenatal screening)
- Z37 (Outcome of delivery)
- Z38 (Liveborn infants according to place of birth)
- Z39 (Postpartum care and examination)
- Z64.0 (Problems related to unwanted pregnancy)

The codes have been selected in order to identify women at all stages of pregnancy and after giving birth among women 12 to 60 years of age. A subset of these ICD 10 codes (ICD code O21) identifies women with excessive vomiting in pregnancy. The start and end of pregnancy is not recorded in the IMS DA databases. Therefore, the number of days that a woman could have been pregnant and the number of days that a woman could still be pregnant at the time of a recorded pregnancy-related diagnosis has been estimated for each pregnancy and post-partum diagnosis code please see Appendix 1. Use of ondansetron during this time period is considered to have taken place during pregnancy. Women with a diagnosis of cancer (ICD codes C00-C97) prior to the recorded pregnancy-related code are excluded. Any use of ondansetron in pregnant women with a diagnosis of cancer up to the time of the ondansetron prescription is also excluded.

The IMS DA databases use EphMRA ATC codes and all prescriptions have an attributed EphMRA ATC code. Ondansetron is identified using the EphMRA ATC code A04A01 for serotonin antagonists and selecting products containing ondansetron on the basis of the substance name.

The study uses version December 2018 of the IMS DA databases. The study period is defined as January 2005 to December 2018.

All pregnant women with no prior diagnosis of cancer are identified, and all use of ondansetron during pregnancy in women with no prior diagnosis of cancer is captured. Pregnant women with excessive vomiting in pregnancy are then specifically identified, and use of ondansetron in these women is captured. Data is provided for the entire study period as well as annually. The time point is determined by the recorded pregnancy-related event. The existence of an ondansetron prescription relates to the specified time window for a possible pregnancy based on the recorded pregnancy-related event, and is expressed as a proportion of pregnant women. In IMS DA Germany, general practitioner (GP) practices and gynaecologist practices are selected for the analysis. Results are presented separately by type of practice.

Results

IMS DA France

Women with a pregnancy-related code between 2005 and 2018

In IMS DA France a total of 75,539 women 12-60 years of age had a pregnancy-related code between 2005 and 2018 and no prior diagnosis of cancer (89 women were excluded due to a prior diagnosis of cancer). A diagnosis of excessive vomiting in pregnancy was identified in 8476 women.

Total use of ondansetron between 2005 and 2018

A total of 634 patients had received a total of 853 prescriptions for ondansetron between 2005 and 2018 of which 400 patients (63.1%) and 544 prescriptions (63.8%) concerned women.

Use of ondansetron in women with a pregnancy-related code between 2005 and 2018 and no prior diagnosis of cancer

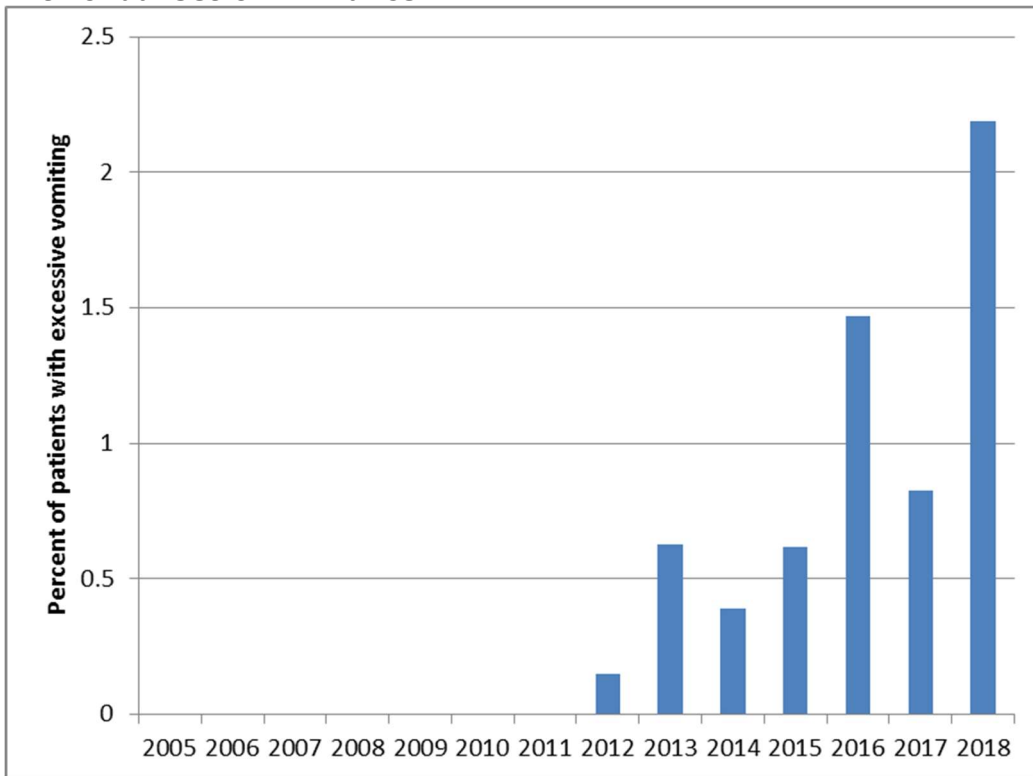
A total of 59 women with a pregnancy-related code between 2005 and 2018 and no prior diagnosis of cancer had received a prescription for ondansetron during pregnancy; 43 of the women had a diagnosis of excessive vomiting in pregnancy, see Table 1. The percentage of women with a diagnosis of excessive vomiting in pregnancy that had received a prescription for ondansetron appeared to increase over time, see Figure 1.

Table 1 Use of ondansetron in women with a pregnancy-related diagnosis between 2005 and 2018 and no prior diagnosis of cancer in France

Year	No. of women a pregnancy-related diagnosis (no. of women with excessive nausea) ¹	No. of women with ondansetron during pregnancy (no. of women with ondansetron for excessive nausea) ¹
2005	3499 (421)	0 (0)
2006	4184 (521)	0 (0)
2007	4469 (560)	0 (0)
2008	4780 (602)	0 (0)
2009	5251 (617)	0 (0)
2010	5480 (581)	0 (0)
2011	5583 (626)	0 (0)
2012	6466 (665)	1 (1)
2013	7876 (638)	5 (4)
2014	9724 (768)	8 (3)
2015	10597 (810)	6 (5)
2016	10352 (749)	15 (11)
2017	10376 (727)	15 (6)
2018	10153 (731)	23 (16)

¹ No prior diagnosis of cancer.

Figure 1 Proportion of women with excessive vomiting during pregnancy treated with ondansetron in France



IMS DA Germany

Women with a pregnancy-related code between 2005 and 2018

In IMS DA Germany a total of 505,312 women 12-60 years of age in gynaecological practices and 141,158 women 12-60 years of age in GP practices had a pregnancy-related code between 2005 and 2018 and no prior diagnosis of cancer (9082 women in gynaecological practices and 1841 women in GP practices were excluded due to a prior diagnosis of cancer). A diagnosis of excessive vomiting in pregnancy was identified in 57,248 women in gynaecological practices and 7944 women in GP practices.

Use of ondansetron between 2005 and 2018

A total of 9769 patients in GP practices had received a total of 21,263 prescriptions for ondansetron between 2005 and 2018 of which 5844 patients (59.8%) and 12,543 prescriptions (59.0%) concerned women. A total of 2134 patients in gynaecological practices had received a total of 5292 prescriptions for ondansetron between 2005 and 2018 of which 2097 patients (98.3%) and 5231 prescriptions (98.8%) concerned women.

Use of ondansetron in women with a pregnancy-related code between 2005 and 2018 and no prior diagnosis of cancer

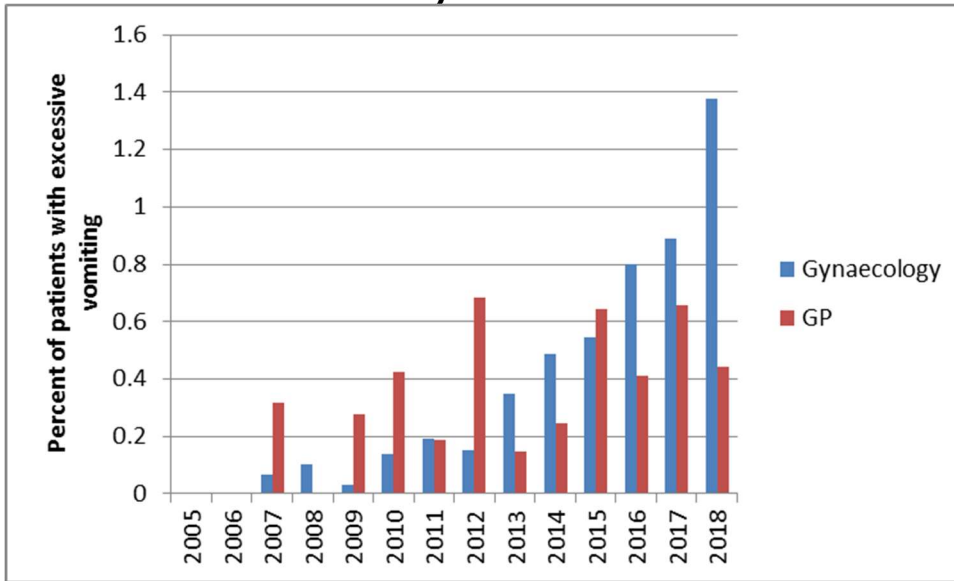
A total of 349 women in gynaecological practices and 47 women in GP practices with a pregnancy-related code between 2005 and 2018 and no prior diagnosis of cancer had received a prescription for ondansetron during pregnancy; 271 of the women in gynaecological practices and 26 in GP practices had a diagnosis of excessive vomiting in pregnancy, see Table 2. The percentage of women with a diagnosis of excessive vomiting in pregnancy that had received a prescription for ondansetron increased over time in gynaecological practices, whereas there was no clear trend over time in GP practices, see Figure 2.

Table 2 Use of ondansetron in women with a pregnancy-related diagnosis between 2005 and 2018 and no prior diagnosis of cancer in Germany

Year	No. of women with a pregnancy-related diagnosis in gynaecological practices (no. of women with excessive nausea) ¹	No. of women with ondansetron during pregnancy in gynaecological practices (no. of women with ondansetron for excessive nausea) ¹	No. of women with a pregnancy-related diagnosis in GP practices (no. of women with excessive nausea) ¹	No. of women with ondansetron during pregnancy in GP practices (no. of women with ondansetron for excessive nausea) ¹
2005	33826 (2244)	0 (0)	4968 (232)	0 (0)
2006	39246 (2612)	1 (0)	5936 (256)	0 (0)
2007	45145 (3034)	4 (2)	7181 (317)	1 (1)
2008	47250 (2886)	8 (3)	7410 (333)	2 (0)
2009	50920 (3322)	15 (1)	8651 (360)	1 (1)
2010	53424 (3657)	14 (5)	9553 (470)	2 (2)
2011	56065 (4190)	14 (8)	11048 (528)	2 (1)
2012	63562 (4651)	15 (7)	12807 (583)	4 (4)
2013	68730 (5421)	33 (19)	13862 (681)	1 (1)
2014	74128 (5943)	40 (29)	15313 (810)	2 (2)
2015	80865 (6625)	58 (36)	17343 (934)	12 (6)
2016	83507 (6480)	77 (52)	18653 (976)	9 (4)
2017	81567 (6525)	110 (58)	17917 (915)	9 (6)
2018	76546 (6239)	131 (86)	17201 (907)	9 (4)

¹ No prior diagnosis of cancer.

Figure 2 Proportion of women with excessive vomiting during pregnancy treated with ondansetron in Germany



Discussion

Prescribing of serotonin antagonists for excessive nausea during pregnancy appeared to increase over time between 2005 and 2018, at least in France and in gynaecological practices in Germany. In 2018, around 1.4% of women with a diagnosis of excessive nausea during pregnancy in gynaecological practices in Germany and 2.2% in France had received ondansetron compared to 0.0% in 2005 and 2006. Also in GP practices there was no prescribing of ondansetron identified in women with a diagnosis of excessive nausea in 2005 and 2006, but apart from this there was no clear trend towards increased prescribing over time. It is possible that these analyses underestimate use of ondansetron during pregnancy because of the possibility a that pregnant woman may visit different healthcare providers for the pregnancy itself and for the treatment of nausea during pregnancy (the same person cannot be identified across different healthcare providers), and due to the possibility that longitudinal data for a pregnant woman may not cover the entire estimated pregnancy time period.

Appendix 1 Pregnancy codes and number of days before and after the code that it was considered possible that a woman could have been pregnant

ICD10 code	Icd10 text	Days before	Days after
O00.0	Abdominal pregnancy	139	0
O00.1	Tubal pregnancy	139	0
O00.2	Ovarian pregnancy	139	0
O00.8	Other ectopic pregnancy	139	0
O00.9	Ectopic pregnancy unspecified	139	0
O01.0	Classical hydatidiform mole	139	0
O01.1	Inccomplete/partial hydatidiform mole	139	0
O01.9	Hydatidiform mole unspecified	139	0
O02.0	Blighted ovum/nonhydatidiform mole	139	0
O02.1	Missed abortion	139	0
O02.8	Other specified abnormal product of conception	139	0
O02.9	Abnormal product of conception unspecified	139	0
O03.0	Spontaneous abortion incomplete+genital tract/pelvic infection	139	0
O03.1	Spontaneous abortion incomplete+delayed/excessive haemorrhage	139	0
O03.2	Spontaneous abortion incomplete+embolism	139	0
O03.3	Spontaneous abortion incomplete+other/unspecified complications	139	0
O03.4	Spontaneous abortion incomplete without complications	139	0
O03.5	Spontaneous abortion complete/unspecified+genital tract/pelvic infection	139	0
O03.6	Spontaneous abortion complete/unspecified+delayed/excessive haemorrhage	139	0
O03.7	Spontaneous abortion complete/unspecified+embolism	139	0
O03.8	Spontaneous abortion complete/unspecified+other/unspecified complications	139	0
O03.9	Spontaneous abortion complete/unspecified without complications	139	0
O04.0	Medical abortion incomplete+genital tract/pelvic infection	139	0
O04.1	Medical abortion incomplete+ delayed/excessive haemorrhage	139	0
O04.2	Medical abortion incomplete+embolism	139	0
O04.3	Medical abortion incomplete+other/unspecified complications	139	0
O04.4	Medical abortion incomplete without complications	139	0
O04.5	Medical abortion complete /unspecified+genital tract/pelvic infection	139	0
O04.6	Medical abortion complete /unspecified+delayed/excessive haemorrhage	139	0
O04.8	Medical abortion complete /unspecified+other/unspecified complications	139	0
O04.9	Medical abortion complete /unspecified without complications	139	0
O05.0	Other abortion incomplete+genital tract/pelvic infection	139	0
O05.1	Other abortion incomplete+delayed/excessive haemorrhage	139	0
O05.3	Other abortion incomplete+other/unspecified complications	139	0
O05.4	Other abortion incomplete without complications	139	0
O05.5	Other abortion complete/unspecified+genital tract/pelvic infection	139	0
O05.6	Other abortion complete/unspecified+delayed/excessive haemorrhage	139	0
O05.8	Other abortion complete/unspecified+other/unspecified complications	139	0

ICD10 code	Icd10 text	Days before	Days after
O05.9	Other abortion complete/unspecified without complications	139	0
O06.0	Unspecified abortion incomplete+genital tract/pelvic infection	139	0
O06.1	Unspecified abortion incomplete+delayed/excessive haemorrhage	139	0
O06.2	Unspecified abortion incomplete+embolism	139	0
O06.3	Unspecified abortion incomplete+other/unspecified complications	139	0
O06.4	Unspecified abortion incomplete without complications	139	0
O06.5	Unspecified abortion complete/unspecified+genital tract/pelvic infection	139	0
O06.6	Unspecified abortion complete/unspecified+delayed/excessive haemorrhage	139	0
O06.7	Unspecified abortion complete/unspecified+embolism	139	0
O06.8	Unspecified abortion complete/unspecified+other/unspecified complications	139	0
O06.9	Unspecified abortion complete/unspecified without complications	139	0
O07.0	Failed medical abortion+genital tract/pelvic infection	139	0
O07.1	Failed medical abortion+delayed/excessive haemorrhage	139	0
O07.2	Failed medical abortion + embolism	139	0
O07.3	Failed medical abortion+other/unspecified complications	139	0
O07.4	Failed medical abortion without complications	139	0
O07.5	Other unspecified failed abortion+genital tract/pelvic infection	139	0
O07.6	Other unspecified failed abortion+delayed/excessive haemorrhage	139	0
O07.8	Other unspecified failed abortion+other/unspecified complications	139	0
O07.9	Other unspecified failed abortion without complications	139	0
O08.0	Genital tract/pelvic infection after abortion and ectopic and molar pregnancy	139	0
O08.1	Delayed/excessive haemorrhage after abortion and ectopic and molar pregnancy	139	0
O08.2	Embolism after abortion and ectopic and molar pregnancy	139	0
O08.3	Shock after abortion and ectopic and molar pregnancy	139	0
O08.4	Renal failure after abortion and ectopic and molar pregnancy	139	0
O08.5	Metabolic disorders after abortion and ectopic and molar pregnancy	139	0
O08.6	Damage to pelvic organs/tissues after abortion and ectopic and molar pregnancy	139	0
O08.7	Other venous complications after abortion and ectopic and molar pregnancy	139	0
O08.8	Other complications after abortion and ectopic and molar pregnancy	139	0
O08.9	Comp after abortion and ectopic and molar pregnancy unspecified	139	0
O10.0	Pre existing essential hypertension complicating pregnancy/childbirth/puerperium	280	280
O10.1	Pre existing hypertensive heart disease complicating pregnancy/childbirth/puerperium	280	280
O10.2	Pre existing hypertensive renal disease complicating pregnancy/childbirth/puerperium	280	280
O10.3	Pre existing hypertensive heart and renal disease complicating pregnancy/childbirth/puerperium	280	280
O10.4	Pre existing secondary hypertension complicating pregnancy/childbirth/puerperium	280	280
O10.9	Unspecified pre existing hypertension complicating pregnancy/childbirth/puerperium	280	280
O11.0	Preeclampsia superimposed on chronic hypertension	280	140
O12.0	Gestational oedema	280	140

ICD10 code	Icd10 text	Days before	Days after
O12.1	Gestational proteinuria	280	140
O12.2	Gestational oedema with proteinuria	280	140
O13.0	Gestational hypertension without significant proteinuria	280	140
O14.0	Moderate pre eclampsia	280	140
O14.1	Severe pre eclampsia	280	140
O14.2	Hellp syndrome	280	140
O14.9	Pre eclampsia unspecified	280	140
O15.0	Eclampsia in pregnancy	280	140
O15.1	Eclampsia in labour	280	0
O15.2	Eclampsia in the puerperium	280	0
O15.9	Eclampsia unspecified as to time	280	140
O16.0	Unspecified maternal hypertension	280	280
O20.0	Threatened abortion	139	280
O20.8	Other haemorrhage in early pregnancy	139	280
O20.9	Haemorrhage early pregnancy unspecified	139	280
O21.0	Mild hyperemesis gravidarum	139	280
O21.1	Hyperemesis gravidarum+metabolic disturbance	139	280
O21.2	Late vomiting of pregnancy	280	140
O21.8	Other vomiting complicating pregnancy	280	280
O21.9	Vomiting of pregnancy unspecified	280	280
O22.0	Varicose veins lower extremity in pregnancy	280	280
O22.1	Genital varices in pregnancy	280	280
O22.2	Superficial thrombophlebitis in pregnancy	280	280
O22.3	Deep phlebothrombosis in pregnancy	280	280
O22.4	Haemorrhoids in pregnancy	280	280
O22.5	Cerebral venous thrombosis in pregnancy	280	280
O22.8	Other venous complications in pregnancy	280	280
O22.9	Venous complication in pregnancy unspecified	280	280
O23.0	Infect of kidney in pregnancy	280	280
O23.1	Infection of bladder in pregnancy	280	280
O23.2	Infection of urethra in pregnancy	280	280
O23.3	Infection of other parts of urinary tract in pregnancy	280	280
O23.4	Unspecified urinary tract infection in pregnancy	280	280
O23.5	Genital infection in pregnancy	280	280
O23.9	Other/unspecified genitourinary tract infection in pregnancy	280	280
O24.0	Pre existing diabetes mellitus in pregnancy insulin dependent	280	280
O24.1	Pre existing diabetes mellitus in pregnancy non insulin dependent	280	280
O24.2	Pre existing malnutrition related diabetes mellitus in pregnancy	280	280
O24.3	Pre existing diabetes mellitus in pregnancy unspecified	280	280
O24.4	Diabetes mellitus arising in pregnancy	280	140
O24.9	Diabetes mellitus in pregnancy unspecified	280	280

ICD10 code	Icd10 text	Days before	Days after
O25.0	Malnutrition in pregnancy	280	280
O26.0	Excess weight gain in pregnancy	280	280
O26.1	Low weight gain in pregnancy	280	280
O26.2	Pregnancy care habitual aborter	280	280
O26.3	Retained intrauterine contraceptive device in pregnancy	280	280
O26.4	Herpes gestationis	280	280
O26.5	Maternal hypotension syndrome	280	280
O26.6	Liver disorders in pregnancy/childbirth/puerperium	280	280
O26.7	Subluxation of symphysis pubis in pregnancy/childbirth/puerperium	280	280
O26.8	Other specified pregnancy related conditions	280	280
O26.9	Pregnancy related condition unspecified	280	280
O28.0	Abnormal haematological finding antenatal screening of mother	280	280
O28.1	Abnormal biochemical finding antenatal screening of mother	280	280
O28.2	Abnormal cytological finding antenatal screening of mother	280	280
O28.3	Abnormal ultrasonic finding antenatal screening of mother	280	280
O28.4	Abnormal radiological finding antenatal screening of mother	280	280
O28.5	Abnormal chromosomal and genetic finding antenatal screening of mother	280	280
O28.8	Other abnormal finding antenatal screening of mother	280	280
O28.9	Abnormal finding antenatal screening of mother unspecified	280	280
O29.0	Pulmonary complications of anaesthesia in pregnancy	280	280
O29.2	Central nervous system complications of anaesthesia in pregnancy	280	280
O29.3	Toxic reaction to local anaesthesia in pregnancy	280	280
O29.4	Spinal and epidural anaesthesia-induced headache in pregnancy	280	280
O29.5	Other complications of spinal and epidural anaesthesia in pregnancy	280	280
O29.6	Failed or difficult intubation in pregnancy	280	280
O29.8	Other complications of anaesthesia in pregnancy	280	280
O29.9	Unspecified complications of anaesthesia in pregnancy	280	280
O30.0	Twin pregnancy	280	280
O30.1	Triplet pregnancy	280	280
O30.2	Quadruplet pregnancy	280	280
O30.8	Other multiple gestation	280	280
O30.9	Multiple gestation unspecified	280	280
O31.0	Papyraceous fetus	280	280
O31.1	Continuing pregnancy after abortion of one fetus or more	280	280
O31.2	Continuing pregnancy after intrauterine death of one fetus or more	280	280
O31.8	Other complications specific to multiple gestation	280	280
O32.0	Maternal care for unstable lie	280	30
O32.1	Maternal care for breech presentation	280	30
O32.2	Maternal care for transverse/oblique lie	280	30
O32.3	Maternal care for face brow/chin presentation	280	30
O32.4	Maternal care for high head at term	280	30

ICD10 code	Icd10 text	Days before	Days after
O32.5	Maternal care for multiple gestation with malpresentation of one fetus or more	280	30
O32.6	Maternal care for compound presentation	280	30
O32.8	Maternal care for other malpresentation of fetus	280	30
O32.9	Maternal care for malpresentation of fetus unspecified	280	30
O33.0	Maternal care for disproportion due to deformity of pelvic bones	280	90
O33.1	Maternal care for disproportion due to generally contracted pelvis	280	90
O33.2	Maternal care for disproportion due to inlet contraction of pelvis	280	90
O33.3	Maternal care for disproportion due to outlet contraction of pelvis	280	90
O33.4	Maternal care for disproportion of mixed maternal+fetal origin	280	90
O33.5	Maternal care for disproportion due to unusually large fetus	280	90
O33.6	Maternal care for disproportion due to hydrocephalic fetus	280	90
O33.7	Maternal care for disproportion due to other fetal deformities	280	90
O33.8	Maternal care for disproportion of other origin	280	90
O33.9	Maternal care for disproportion unspecified	280	90
O34.0	Maternal care for congenital malformation of uterus	280	280
O34.1	Maternal care for tumour corpus uteri	280	280
O34.2	Maternal care for uterine scar from previous surgery	280	280
O34.3	Maternal care for cervical incompetence	280	280
O34.4	Maternal care for other abnormalities of cervix	280	280
O34.5	Maternal care for other abnormalities of gravid uterus	280	280
O34.6	Maternal care for abnormality of vagina	280	280
O34.7	Maternal care for abnormality of vulva/perineum	280	280
O34.8	Maternal care for other abnormality of pelvic organs	280	280
O34.9	Maternal care for abnormality of pelvic organs unspecified	280	280
O35.0	Maternal care for suspected central nervous system malformation in fetus	280	280
O35.1	Maternal care for suspected chromosomal abnormality in fetus	280	280
O35.2	Maternal care for suspected hereditary disease in fetus	280	280
O35.3	Maternal care for suspected damage to fetus of viral disease in mother	280	280
O35.4	Maternal care for suspected damage to fetus from alcohol	280	280
O35.5	Maternal care for suspected damage to fetus from drugs	280	280
O35.6	Maternal care for suspected damage to fetus from radiation	280	280
O35.7	Maternal care for suspected damage to fetus by other medical procedures	280	280
O35.8	Maternal care for other suspected fetal abnormality/damage	280	280
O35.9	Maternal care for suspected fetal abnormality/damage unspecified	280	280
O36.0	Maternal care for rhesus isoimmunisation	280	280
O36.1	Maternal care for other isoimmunisation	280	280
O36.2	Maternal care for hydrops fetalis	280	280
O36.3	Maternal care for signs of fetal hypoxia	280	280
O36.4	Maternal care for intrauterine death	280	280
O36.5	Maternal care for poor fetal growth	280	280
O36.6	Maternal care for excessive fetal growth	280	280

ICD10 code	Icd10 text	Days before	Days after
O36.7	Maternal care for viable fetus in abdominal pregnancy	280	280
O36.8	Maternal care for other/specified fetal problems	280	280
O36.9	Maternal care for fetal problem unspecified	280	280
O40.0	Polyhydramnios	280	280
O41.0	Oligohydramnios	280	280
O41.1	Infection of amniotic sac/membranes	280	280
O41.8	Other specified disorder of amniotic fluid/membranes	280	280
O41.9	Disorder of amniotic fluid/membranes unspecified	280	280
O42.0	Premature rupture of membranes onset of labour within 24 hr	280	1
O42.1	Premature rupture of membranes onset of labour after 24 hr	280	7
O42.2	Premature rupture of membranes labour delayed by therapy	280	280
O42.9	Premature rupture of membranes unspecified	280	280
O43.0	Placental transfusion syndromes	280	280
O43.1	Malformation of placenta	280	280
O43.2	Morbidly adherent placenta	280	280
O43.8	Other placental disorders	280	280
O43.9	Placental disorder unspecified	280	280
O44.0	Placenta praevia specified as without haemorrhage	280	280
O44.1	Placenta praevia with haemorrhage	280	280
O45.0	Premature separation of placenta with coagulation defect	280	280
O45.8	Other premature separation of placenta	280	280
O45.9	Premature separation of placenta unspecified	280	280
O46.0	Antepartum haemorrhage with coagulation defect	280	280
O46.8	Other antepartum haemorrhage	280	280
O46.9	Antepartum haemorrhage unspecified	280	280
O47.0	False labour before 37 weeks	258	280
O47.1	False labour at/after 37weeks	280	21
O47.9	False labour unspecified	280	280
O48.0	Prolonged pregnancy	287	7
O60.0	Preterm labour no delivery	258	280
O60.1	Preterm labour with preterm delivery	258	0
O60.2	Preterm labour with term delivery	280	0
O60.3	Preterm delivery no spontaneous labour	258	0
O61.0	Failed medical induction of labour	280	7
O61.1	Failed instrumental induction of labour	280	7
O61.8	Other failed induction of labour	280	7
O61.9	Failed induction of labour unspecified	280	7
O62.0	Primary inadequate contractions	280	0
O62.1	Secondary uterine inertia	280	0
O62.2	Other uterine inertia	280	0
O62.3	Precipitate labour	280	0

ICD10 code	Icd10 text	Days before	Days after
O62.4	Hypertonic incoordinate/prolonged uterine contractions	280	0
O62.8	Other abnormalities of forces of labour	280	0
O62.9	Abnormalities of forces of labour unspecified	280	0
O63.0	Prolonged 1st stage (labour)	280	0
O63.1	Prolonged 2nd stage (labour)	280	0
O63.2	Delayed delivery of second twin triplet etc.	280	0
O63.9	Long labour unspecified	280	0
O64.0	Obstructed labour due to incomplete rotation of fetal head	280	0
O64.1	Obstructed labour due to breech presentation	280	0
O64.2	Obstructed labour due to face presentation	280	0
O64.3	Obstructed labour due to brow presentation	280	0
O64.4	Obstructed labour due to shoulder presentation	280	0
O64.5	Obstructed labour due to compound presentation	280	0
O64.8	Obstructed labour due to other malposition/malpresentation	280	0
O64.9	Obstructed labour due to malposition/malpresentation unspecified	280	0
O65.0	Obstructed labour due to deformed pelvis	280	0
O65.1	Obstructed labour due to generally contracted pelvis	280	0
O65.2	Obstructed labour due to pelvic inlet contraction	280	0
O65.3	Obstructed labour due to pelvic outlet and mid cavity contraction	280	0
O65.4	Obstructed labour due to fetopelvic disproportion	280	0
O65.5	Obstructed labour due to abnormality of maternal pelvic organs	280	0
O65.8	Obstructed labour due to other maternal pelvic abnormalities	280	0
O65.9	Obstructed labour due to maternal pelvic abnormality unspecified	280	0
O66.0	Obstructed labour due to shoulder dystocia	280	0
O66.1	Obstructed labour due to locked twins	280	0
O66.2	Obstructed labour due to unusually large fetus	280	0
O66.3	Obstructed labour due to other abnormalities of fetus	280	0
O66.4	Failed trial of labour unspecified	280	0
O66.5	Failed application of vacuum extractor and forceps unspecified	280	0
O66.8	Other specified obstructed labour	280	0
O66.9	Obstructed labour unspecified	280	0
O67.0	Intrapartum haemorrhage with coagulation defect	280	0
O67.8	Other intrapartum haemorrhage	280	0
O67.9	Intrapartum haemorrhage unspecified	280	0
O68.0	Labour/delivery+fetal heart rate anomaly	280	0
O68.1	Labour/delivery+meconium in amniotic fluid	280	0
O68.2	Labour/delivery+fetal heart rate anomaly+meconium in amniotic fluid	280	0
O68.3	Labour/delivery+biochemical evidence of fetal stress	280	0
O68.8	Labour/delivery+other evidence of fetal stress	280	0
O68.9	Labour/delivery+fetal stress unspecified	280	0
O69.0	Labour/delivery + prolapse of cord	280	0

ICD10 code	Icd10 text	Days before	Days after
O69.1	Labour/delivery+cord around neck+compression	280	0
O69.2	Labour/delivery+other cord entanglement+compression	280	0
O69.3	Labour/delivery complicated by short cord	280	0
O69.4	Labour/delivery complicated by vasa praevia	280	0
O69.5	Labour/delivery + vascular lesion of cord	280	0
O69.8	Labour/delivery other cord complications	280	0
O69.9	Labour/delivery cord complication unspecified	280	0
O70.0	First degree perineal laceration during delivery	280	0
O70.1	Second degree perineal laceration during delivery	280	0
O70.2	Third degree perineal laceration during delivery	280	0
O70.3	Fourth degree perineal laceration during delivery	280	0
O70.9	Perineal laceration during delivery unspecified	280	0
O71.0	Rupture of uterus before onset of labour	280	0
O71.1	Rupture of uterus during labour	280	0
O71.2	Postpartum inversion of uterus	280	0
O71.3	Obstetric laceration of cervix	280	0
O71.4	Obstetric high vaginal laceration	280	0
O71.5	Other obstetric injury to pelvic organs	280	0
O71.6	Obstetric damage to pelvic joints/ligaments	280	0
O71.7	Obstetric haematoma of pelvis	280	0
O71.8	Other specified obstetric trauma	280	0
O71.9	Obstetric trauma unspecified	280	0
O72.0	Third stage haemorrhage	280	0
O72.1	Other immediate postpartum haemorrhage	280	0
O72.2	Delayed/secondary postpartum haemorrhage	280	0
O72.3	Postpartum coagulation defects	280	0
O73.0	Retained placenta without haemorrhage	280	0
O73.1	Retained portions of placenta/membranes without haemorrhage	280	0
O74.0	Aspiration pneumonitis due to anaesthesia during labour/delivery	280	0
O74.1	Other pulmonary complications of anaesthesia during labour/delivery	280	0
O74.2	Cardiac complications of anaesthesia during labour/delivery	280	0
O74.3	Central nervous system complications to anaesthesia during labour/delivery	280	0
O74.4	Toxic reaction to local anaesthesia during labour/delivery	280	0
O74.5	Spinal/epidural anaesthesia induced headache during labour/delivery	280	0
O74.6	Other complications of spinal/epidural anesthesia during labour/delivery	280	0
O74.8	Other complications of anaesthesia during labour/delivery	280	0
O74.9	Complications of anaesthesia during labour/delivery unspecified	280	0
O75.0	Maternal distress during labour/delivery	280	0
O75.1	Shock during or following labour/delivery	280	0
O75.2	Pyrexia during labour not elsewhere classified	280	0
O75.3	Other infection during labour	280	0

ICD10 code	Icd10 text	Days before	Days after
075.4	Other complications of obstetric surgery/procedures	280	0
075.5	Delayed delivery after arterial rupture of membranes	280	0
075.6	Delayed delivery after spontaneous/unspecified rupture of membranes	280	0
075.7	Vaginal delivery following previous caesarian section	280	0
075.8	Other specified complications of labour/delivery	280	0
075.9	Complications of labour/delivery unspecified	280	0
080.0	Spontaneous vertex delivery	280	0
080.1	Spontaneous breech delivery	280	0
080.8	Other single spontaneous delivery	280	0
080.9	Single spontaneous delivery unspecified	280	0
081.0	Low forceps delivery	280	0
081.1	Mid cavity forceps delivery	280	0
081.3	Other/unspecified forceps delivery	280	0
081.4	Vacuum extraction delivery	280	0
081.5	Delivery by forceps+vacuum extractor	280	0
082.0	Delivery by elective caesarian section	280	0
082.1	Delivery by emergency caesarian section	280	0
082.2	Delivery by caesarian hysterectomy	280	0
082.8	Other single delivery by caesarian section	280	0
082.9	Delivery by caesarian section unspecified	280	0
083.0	Breech extraction	280	0
083.1	Other assisted breech delivery	280	0
083.2	Other manipulation assisted delivery	280	0
083.3	Delivery viable fetus in abdominal pregnancy	280	0
083.8	Other specified assisted single delivery	280	0
083.9	Assisted single delivery unspecified	280	0
084.0	Multiple spontaneous delivery	280	0
084.2	Multiple caesarian section delivery	280	0
084.8	Other multiple delivery	280	0
084.9	Multiple delivery unspecified	280	0
085.0	Puerperal sepsis	322	0
086.0	Infection of obstetric surgical wound	322	0
086.1	Other genital infection after delivery	322	0
086.2	Urinary tract infection after delivery	322	0
086.3	Other genitourinary infection after delivery	322	0
086.4	Pyrexia of unknown origin after delivery	322	0
086.8	Other specified puerperal infection	322	0
087.0	Superficial thrombophlebitis in puerperium	322	0
087.1	Deep phlebothrombosis in puerperium	322	0
087.2	Haemorrhoids in puerperium	322	0
087.3	Cerebral venous thrombosis in puerperium	322	0

ICD10 code	Icd10 text	Days before	Days after
087.8	Other venous complications in puerperium	322	0
087.9	Venous complications in puerperium unspecified	322	0
088.0	Obstetric air embolism	322	280
088.1	Amniotic fluid embolism	322	280
088.2	Obstetric blood clot embolism	322	280
088.3	Obstetric pyaemic/septic embolism	322	280
088.8	Other obstetric embolism	322	280
089.0	Pulmonary complications of anaesthesia during the puerperium	322	0
089.1	Cardiac complications of anaesthesia during the puerperium	322	0
089.3	Toxic reaction to local anaesthesia during the puerperium	322	0
089.4	Spinal/epidural anaesthesia induced headache during the puerperium	322	0
089.5	Other complications of spinal/epidural anaesthesia during the puerperium	322	0
089.6	Failed/difficult intubation during the puerperium	322	0
089.8	Other complications of anaesthesia during the puerperium	322	0
089.9	Complications of anaesthesia unspecified	322	0
090.0	Disruption of caesarian section wound	322	0
090.1	Disruption of perineal obstetric wound	322	0
090.2	Haematoma of obstetric wound	322	0
090.3	Cardiomyopathy in puerperium	322	0
090.4	Postpartum acute renal failure	322	0
090.5	Postpartum thyroiditis	322	0
090.8	Other complications of the puerperium not elsewhere classified	322	0
090.9	Complications of the puerperium unspecified	322	0
091.0	Infection of nipple associated with childbirth	322	0
091.1	Abscess of breast associated with childbirth	322	0
091.2	Nonpurulent mastitis associated with childbirth	322	0
092.0	Retracted nipple associated with childbirth	322	0
092.1	Cracked nipple associated with childbirth	322	0
092.2	Other/unspecified disorders of breast associated with childbirth	322	0
092.3	Agalactia	322	0
092.4	Hypogalactia	322	0
092.5	Suppressed lactation	322	0
092.6	Galactorrhoea	322	0
092.7	Other & unspecified disorders of lactation	322	0
094.0	Sequelae of complication of pregnancy/birth/puerperium		
095.0	Obstetric death of unspecified cause	322	0
096.0	Death from direct obstetric cause >42 days to less than 365 days after delivery		
097.0	Death from sequelae of direct obstetric cause		
097.1	Death from sequelae of indirect obstetric cause		
097.9	Death from sequelae of unspecified obstetric cause		
098.0	Tuberculosis complicating pregnancy/childbirth/ puerperium	322	280

ICD10 code	Icd10 text	Days before	Days after
O98.1	Syphilis complicating pregnancy/childbirth/ puerperium	322	280
O98.2	Gonorrhoea complicating pregnancy/childbirth/ puerperium	322	280
O98.3	Other infectious sexually transmitted disease complicating pregnancy/childbirth/ puerperium	322	280
O98.4	Viral hepatitis complicating pregnancy/childbirth/ puerperium	322	280
O98.5	Other viral disease complicating pregnancy/childbirth/ puerperium	322	280
O98.6	Protozoal disease complicating pregnancy/childbirth/ puerperium	322	280
O98.7	HIV complicating pregnancy/childbirth/ puerperium	322	280
O98.8	Other maternal infectious/parasitic disease complicating pregnancy/childbirth/ puerperium	322	280
O98.9	Unspecified maternal infectious/parasitic disease complicating pregnancy/childbirth/ puerperium	322	280
O99.0	Anaemia complicating pregnancy/childbirth/ puerperium	322	280
O99.1	Other disease of blood and blood forming organs & certain immune-mechanism disorders complicating pregnancy/childbirth/ puerperium	322	280
O99.2	Endocrine nutritional and metabolic diseases complicating pregnancy/childbirth/ puerperium	322	280
O99.3	Mental/central nervous system disorders complicating pregnancy/childbirth/ puerperium	322	280
O99.4	Diseases of circulatory system complicating pregnancy/childbirth/ puerperium	322	280
O99.5	Diseases of respiratory system complicating pregnancy/childbirth/ puerperium	322	280
O99.6	Diseases of digestive system complicating pregnancy/childbirth/ puerperium	322	280
O99.7	Diseases of skin/subcutaneous tissue complicating pregnancy/childbirth/ puerperium	322	280
O99.8	Other specified diseases/conditions complicating pregnancy/childbirth/ puerperium	322	280
Z32.1	Pregnancy confirmed	280	280
Z33.0	Pregnancy state incident	280	280
Z34.0	Supervision of normal first pregnancy	280	280
Z34.8	Supervision of other normal pregnancy	280	280
Z34.9	Supervision of normal pregnancy unspecified	280	280
Z35.0	Supervision of pregnancy with history of infertility	280	280
Z35.1	Supervision of pregnancy with history of abortive outcome	280	280
Z35.2	Supervision of pregnancy with other poor reproductive or obstetric history	280	280
Z35.3	Supervision of pregnancy with history of insufficient antenatal care	280	280
Z35.4	Supervision of pregnancy with grand multiparity	280	280
Z35.5	Supervision of elderly primigravida	280	280
Z35.6	Supervision of very young primigravida	280	280
Z35.7	Supervision of high-risk pregnancy due to social problems	280	280
Z35.8	Supervision of other high-risk pregnancy	280	280
Z35.9	Supervision of high-risk pregnancy unspecified	280	280
Z36.0	Antenatal screening for chromosomal anomalies	280	280
Z36.1	Antenatal screening for raised alpha-fetoprotein level	280	280
Z36.2	Other antenatal screening based on amniocentesis	280	280
Z36.3	Antenatal screening for malformations using ultrasound and other physical methods	280	280

ICD10 code	Icd10 text	Days before	Days after
Z36.4	Antenatal screening for fetal growth retardation using ultrasound and other physical methods	280	280
Z36.5	Antenatal screening for isoimmunization	280	280
Z36.8	Other antenatal screening	280	280
Z36.8	Antenatal screening unspecified	280	280
Z37.0	Single live birth	280	0
Z37.1	Single stillbirth	280	0
Z37.2	Twins both liveborn	280	0
Z37.3	Twins one liveborn and one stillborn	280	0
Z37.4	Twins both stillborn	280	0
Z37.5	Other multiple births all liveborn	280	0
Z37.7	Other multiple births all stillborn	280	0
Z37.9	Outcome of delivery unspecified	280	0
Z38.0	Singleton born in hospital	280	0
Z38.1	Singleton born outside hospital	280	0
Z38.2	Singleton unspecified place of birth	280	0
Z38.3	Twin born in hospital	280	0
Z38.4	Twin born outside hospital	280	0
Z38.5	Twin unspecified place of birth	280	0
Z38.6	Other multiple born in hospital	280	0
Z38.8	Other multiple unspecified place of birth	280	0
Z39.0	Care and examination immediately after delivery	280	0
Z39.1	Care and examination of lactating mother	322	0
Z39.2	Routine postpartum follow-up	322	0
Z64.0	Problems related to unwanted pregnancy	280	280
Z64.1	Problems related to multiparity	280	280