**Supplemental Appendix 3.** Study Characteristics and Details.

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| **Study** | **Year** | **Original Language** | **Methodology** | **Sample Size**  **(if applicable)** | **Objectives** | **Findings** |
| ACOG 1 | 2017 | English | Committee opinion |  | ACOG guidelines on the management of OUD in pregnancy | Several measures are proposed, including multidisciplinary management. For chronic pain, avoid opioids for pain management, highlight alternatives (nonpharmacologic and nonopioid pharmacologic options). Caution on prescribing opioids; balance against need to address pain. Do not recommend medically supervised withdrawal during pregnancy, labor, and delivery. |
| Alto 89 | 2011 | English | Review |  | To review optimal care of pregnant people with OUD | Chronic pain history or treatment is identified as a risk factor for substance use. Labor: Dividing buprenorphine dose to 25% every 6 hours can contribute to analgesia. Systemic opioids do not need to be avoided (no citations given). Postpartum: Emphasize non-opioid analgesics. Anticipate higher doses of opioids. Scheduled opioid doses may allay anxiety in contrast to as needed dosing. Nalbuphine and butorphanol should never be given due to risk for precipitating acute withdrawal symptoms. |
| Birnbach8 | 2001 | English | Prospective observational study | 50 | To determine prevalence of polysubstance abuse among parturients who received no prenatal care | 26 (52%) tested positive for cocaine and of these 6 (23%) were positive for morphine. Authors note that knowledge of opioid use is important to anesthetic and analgesic management in labor because it can affect treatment decisions to use neuraxial or systemic opioids, and to avoid mixed agonist-antagonist agents which can precipitate withdrawal. |
| Birnbach 31 | 1998 | English | Monograph chapter |  | To review substances of abuse used by people during pregnancy and implications for analgesia during labor and delivery | Common substances include alcohol, cocaine, marijuana, cigarettes, and opioids. Anesthesiologists and clinicians should interact without bias. Screening for alcohol and drugs, assessment of problems related to their use, and assistance in terms of therapy, pharmacotherapy, and drug testing are needed. Multidisciplinary approach to patient management is necessary, prenatal anesthesia consultation can be part of that management. |
| Boyle90 | 1991 | English | Case report |  | Presentation of the case of management of a complex patient with OUD, delivered via cesarean under general anesthesia. | Postoperative analgesia was by PCA with morphine with a background infusion of 3mg/hr. Dose needed to be escalated due to poorly controlled pain. No methadone was given until bowel sounds were audible (36 hours postoperatively). The patient's outcome might have been aided by regular counseling, frequent prenatal obstetric review, and substitution of oral methadone for heroin. |
| Brown 40 | 2020 | English | Review |  | To review management of pregnant people with OUD | Guidelines were reviewed.  Pain management during and after labor and delivery should meet individual patient needs, use evidence-based prescribing, and requires collaborative work with addiction management experts. Postpartum, women are at risk for return to use, so follow-up is essential. |
| Buckley91 | 2014 | English | Review |  | To review literature on perioperative management of addicted obstetrical patients | There are few such studies. Lack of controlled trials on obstetrical analgesia and addiction and in perioperative analgesia and addiction. Focus of publications in obstetrics is on addiction management during pregnancy and not on analgesic requirements. Suggestions for pain management are provided. |
| Cassidy 9 | 2004 | English | Retrospective case note review | 85 | To identify anesthetic challenges relevant to OUD in pregnancy | There are substantial demands on obstetric anesthetic services related to OUD. Early antenatal referral for anesthetic review is recommended. Methods for analgesia/anesthesia during labor were summarized and reviewed, spanning no analgesia (11.8%), nitrous oxide only (9.4%), systemic opioids (19.6%), epidural analgesia (47%). Multidisciplinary approach to patient management is necessary, prenatal anesthesia consultation can be part of that management. |
| Cengiz 49 | 2013 | English | Case report |  | Case report of a woman with OUD who delivered at 28 weeks gestation | Rhabdomyolysis is a complication /co-morbidity that can present with substance use disorder, specifically heroin. The case was described in detail. Regional anesthesia was used for cesarean delivery. The authors mention higher doses of opioids needed for analgesia. |
| Duzyj86 | 2020 | English | Pilot randomized control trial | 12 | To determine the effect of transcutaneous electrical nerve stimulation on post-cesarean pain in people with OUD | 2 subjects with OUD received TENS after cesarean delivery. Reductions in pain levels over time were reported. TENS may be effective for control of post-cesarean pain in people with OUD |
| Ecker10 | 2019 | English | Report on a conference on OUD in pregnancy |  | To discuss issues surrounding OUD in pregnancy | 1 in 300 women will become dependent on opioids after cesarean delivery. Substance use plays a role in pregnancy-associated deaths. NSAIDs and acetaminophen should be given as first-line treatments after birth. Short courses of low-doses opioids can be considered for severe pain. Pain management for women taking opioids for chronic pain or who have OUD involves multidisciplinary approach that should include anesthesia consultation. Neuraxial analgesia for labor should be encouraged. Persistent postdelivery pain after 24 hours may require full opioid agonist therapy. Multidisciplinary approach to patient management is necessary |
| Ellis32 | 2019 | English | Chart review | 81 | To examine demographic, treatment, and delivery factors associated with post birth retention among people with OUD | Treatment discharge and opioid misuse were common after delivery. Authors advocate increasing support to minimize likelihood of treatment discontinuation or return to use. |
| Eyler 11 | 2013 | English | Review |  | To review the literature on acute and chronic pain among patients receiving treatment for addiction | Pain sensitivity and pain responses were significantly different from those not maintained on opioids. Multidisciplinary approach to patient management is necessary |
| Faitot52 | 2009 | English | Review |  | To provide practical clinical information on the anesthetic/analgesic management of drug-abusing pregnant people | There is a lack of high-quality evidence; most recommendations are based on expert opinion |
| Fultz33 | 1975 | English | Review |  | Reviewed management of OUD in pregnancy | Analgesia for opioid-maintained patients may include “normal doses” of hydromorphone, meperidine, or morphine in addition to maintenance opioid doses. Opioid tolerance shortens duration of analgesia, so frequent dosing intervals are anticipated. |
| Goff 53 | 2007 | English | Review |  | A discussion of the care of the pregnant people with OUD treated with methadone | The authors suggest the multidisciplinary approach to pain management for patients with OUD. |
| Gomar 50 | 1984 | English | Case report |  | Description of management of septic S. aureus sacroiliitis in a heroin-addicted pregnant woman | Back pain in heroin-addicted pregnant people may indicate infectious sacroiliitis or other joint infection. Neuraxial analgesia or anesthesia may be used for pain management in acute pain events in pregnant people with OUD. |
| Gopman54 | 2014 | English | Review |  | To review guidelines for obstetrical care of pregnant people with OUD | Opioid replacement therapy improves outcomes in people with OUD and is not a contraindication to breastfeeding |
| Gupta 79 | 2013 | English | Retrospective cohort study | 19 | To compare adequacy of peripartum pain management with or without neuraxial opioids in patients on buprenorphine maintenance therapy | Trends for higher analgesic needs in patients undergoing emergent cesarean after failed labor were noted. The study was insufficiently powered to draw meaningful conclusions. |
| Hoflich 12 | 2012 | English | Randomized controlled trial | 40 | To investigate differences in pain management and opioid maintenance in people with and without OUD | Patients with OUD have greater pain sensitivity and opioid tolerance, complicating pain management. Patients with OUD received fewer opioid analgesics, NSAIDs used more frequently after cesarean delivery in OUD group. Greater nicotine consumption in the OUD group had a strong influence on results; smoking status should be considered and weighed in pain management plans for patients with OUD. Multidisciplinary approach to patient management is necessary |
| Harter67 | 2019 | English | Case report and literature review |  | To discuss general principles of management of OUD in pregnancy | Maintenance with buprenorphine or methadone is effective. Multimodal pain management is emphasized with specific recommendations made (nonpharmacologic measures such as massage and doula support, neuraxial analgesia and anesthesia, nitrous oxide, nonopioid adjunctive medications) |
| Hoyt81 | 2018 | English | Observational study | 14 | To determine the effect of substituting clonidine for fentanyl in epidural solutions during labor and after cesarean delivery | Clonidine and bupivacaine were effective for pain management in labor in patients on buprenorphine receiving neuraxial labor analgesia |
| Jones34 | 2018 | English | Clinical opinion |  | To discuss counseling and treatment of a pregnant woman with OUD on naltrexone | There is no evidence to support initiation of naltrexone during pregnancy. No published data addressing management of analgesia or anesthesia for cesarean delivery in women maintained on naltrexone. Anticipate challenges with postoperative pain control, use of adjunctive medications such as ketamine in doses that may require additional high intensity monitoring. |
| Jones51 | 2014 | English | Clinical opinion |  | To review selected management issues for pregnant people with OUD | Acute pain management may be complicated by pain hypersensitivity and risks for acute withdrawal due to mixed agonist-antagonist therapies. Clinicians should screen for OUD and manage it appropriately in pregnant people with OUD. Co-management between anesthesiology, pain, and addiction management experts is needed in these cases. |
| Jones55 | 2012 | English | Review |  | To review methadone and buprenorphine maintenance for people with OUD | Buprenorphine and methadone did not differ significantly on use of analgesia around delivery. Medication choice should consider the risk-benefit ratio for each maternal-fetal dyad |
| Jones69 | 2012 | English | Review |  | To review outcomes following maternal treatment with buprenorphine | Buprenorphine produced less severe neonatal abstinence syndrome than methadone; however, both should be considered in treatment of OUD in pregnancy. Authors note a need for double-blinded studies in pregnant patients for pain management outcome assessment. |
| Jones 41 | 2006 | English | Case report | 2 | To illustrate pain management in pregnant people with OUD maintained with methadone or buprenorphine | In one case, 24 hours of intravenous PCA with morphine was used with a demand dose of 1.5mg, lockout interval of 7 minutes, and 30mg four-hour dose limit with low pain score ratings throughout all postpartum days. She was prescribed oxycodone 5mg every 4-6 hours as needed upon discharge. In another case of a woman abstaining from all opioids, epidural anesthesia, and 24-hour PCA was used in the same manner described above with similarly low pain score reports. Authors conclude patients with OUD maintained on either buprenorphine or methadone can safely use other opioids in combination with non-opioid medications. |
| Jones 13 | 2008 | English | Guidelines based on a double-blind, double-dummy, flexible-dosing, parallel-group clinical trial |  | All phases of management of OUD are discussed | Partial opioid agonists risk opioid withdrawal during pain management, depending on type of partial agonist used. Emphasis on non-opioid analgesics such as NSAIDs or acetaminophen, although opioid PCAs can be safely used. Neuraxial analgesia for labor should be offered. The review concludes with consideration of co-morbid psychiatric disorders and medication interactions. Multidisciplinary approach to patient management is necessary |
| Jones29 | 2009 | English | Randomized controlled trial | 18 | To determine the adequacy of pain control using non-opioid and opioid medications in women with OUD on buprenorphine or methadone prior to vaginal delivery; to quantify the amount of medications needed in both groups immediately postpartum | Patients on either buprenorphine or methadone had adequate pain control with opioids and ibuprofen. The methadone group used more ibuprofen postpartum. Multidisciplinary approach to patient management is necessary |
| Klaman 56 | 2017 | English | Review |  | To summarize the literature on treatment of pregnant women with OUD and their infants and children | Limited publications on ideal pain management and postpartum dosing regimens. Phenomena of tolerance and hyperalgesia are discussed. Higher doses of opioids are anticipated during labor, delivery, and postpartum period. Avoid mixed agonist-antagonist medications due to risk of precipitated withdrawal. Buprenorphine maintained women have reduced ibuprofen use postpartum whereas methadone-maintained women increase daily ibuprofen dose postpartum. |
| Kliman68 | 1990 | English | Case report and literature review |  | To focus on antenatal and intrapartum problems related to management of OUD | Self-medication is possible to control labor pain. Usual methadone doses should be given during labor. Opioids can be used for pain control. Neuraxial anesthesia and analgesia should be recommended. |
| Ko66 | 2020 | English | Cross-sectional survey | 462 | To describe OB/Gyn practices and attitudes related to OUD in pregnant and postpartum people | ACOG/ASAM advise physicians to minimize the use of opioids for pain management in patients with chronic pain. Thus, opioid prescribing in pregnancy may require specialized care. The evidence suggested that efforts are needed to improve physician confidence in managing these patients |
| Kork 14 | 2011 | German | Review |  | To summarize literature on anesthetic treatment of pregnant people who use drugs | Altered pain perception is possible. Patients with addiction experience intense fear associated with pain, which makes it important to involve people the patient trusts in care e.g., midwives, doulas, to help with pain management and pain coping. Postoperative pain therapy can include neuraxial anesthesia and analgesia, wound infiltration, non-opioid analgesics. Multidisciplinary approach to patient management is necessary, prenatal anesthesia consultation can be part of that management. |
| Krans 75 | 2018 | English | Retrospective cohort study | 248 | To determine the effect of a patient-centered substance abuse treatment program on outcomes in pregnant people with OUD | Pregnant patients engaged in a pregnancy recovery center program were more likely to attend postpartum visits, receive reversible contraceptives, and remain consistent with buprenorphine dosing throughout pregnancy and after delivery. |
| Kuczkowski 35 | 2007 | English | Review |  | To provide an update on the effects of drug abuse on pregnancy outcome | Pain perception is altered in patients with substance use disorder even in patients exhibiting spinal/epidural anesthesia sensory levels. |
| Kunycky 42 | 2018 | English | Quality improvement project (poster) | 16 | To guide postoperative pain control for patients on medication assisted treatment | Many patients failed to receive protocolized pain treatment after cesarean delivery. Education of healthcare workers needed. Stigma and knowledge gaps may be reasons for failure to follow protocol |
| Landau72 | 2019 | English | Review |  | Review of evidence-based guidelines for management of OUD in pregnancy | Adequate pain relief while avoiding opioid withdrawal may need to incorporate opioid-sparing approaches such as neuraxial opioids, clonidine, ketamine, gabapentin, regional anesthesia. |
| Leighton 77 | 2017 | English | Case series | 4 | To report pain management in four patients with OUD treated with buprenorphine | All four patients did well but experienced postoperative pain that was managed with supplemental opioids and regional anesthesia |
| Ludlow73 | 2007 | English | Review |  | Literature search of epidemiological, research, and review papers on substance abuse in pregnancy | Emphasis is given on the multidisciplinary approach to pain management, including antenatal pain management planning. |
| Ludlow 36 | 2004 | English | Retrospective chart review | 141 | To determine obstetric and perinatal outcomes in people who used opioids or amphetamines during pregnancy | Pharmacologic analgesia for labor and delivery is needed more often in patient with substance use disorder. |
| Lugo 57 | 2005 | English | Review |  | Literature search on the pharmacokinetics of methadone | Pregnant women may require higher or more frequent doses of methadone. Knowledge of pharmacokinetics and pharmacodynamics of methadone can affect treatment regimens such as with other concomitant opioid pain medications. |
| Mahoney58 | 2019 | English | Review |  | Review of evidence-based guidelines for management of OUD in pregnancy | Patients with MOUD may affect pain management plans in labor; medication dose for MOUD should not change in labor but coordination should be made between obstetrician, addiction specialist, and anesthesiologist and social worker |
| Martin15 | 2019 | English | Review |  | To provide an evidence-based solutions for management of OUD in pregnancy. | Increasing doses of methadone or buprenorphine does not improve pain control. Antenatal pain management planning is necessary with obstetric, addiction, anesthesia, nursing providers. Multidisciplinary approach to patient management is necessary, prenatal anesthesia consultation can be part of that management. |
| Martin 80 | 1990 | English | Double-blind placebo-controlled trial | 42 | To assess the effects of epidural methadone in primigravid patients | Epidural methadone was associated with lower motor block and pain scores in labor and reduced the requirement for bupivacaine, without side effects |
| McCalla16 | 1995 | English | Prospective cohort study | 2411 | To compare drug use patterns among parturients at a single center in two periods | Opioid use in pregnancy remained stable. Cocaine use decreased and marijuana use increased. Polysubstance use in pregnancy is not unusual and can affect pain management. Multidisciplinary approach to patient management is necessary |
| McNicholas 65 | 2012 | English | Secondary analysis of a randomized controlled trial | 175 | To measure hepatic enzyme values during pregnancy in people with hepatitis C maintained with methadone or buprenorphine | Neither methadone nor buprenorphine had adverse effects on liver function in pregnant people with hepatitis C receiving MOUD. This data may help devise pain therapeutic plans around labor and delivery. |
| Meyer 44 | 2010 | English | Historical cohort-control study | 63 | To determine whether buprenorphine maintenance alters intrapartum or postpartum pain or medication requirements; matched controls with opioid-naïve untreated controls | Buprenorphine-maintained people had similar intrapartum pain and analgesic needs in vaginal delivery (reported higher pain after vaginal delivery but required no increase in opioid administration); required more opioids post-cesarean (47% higher). |
| Meyer 43 | 2007 | English | Historical cohort-control study | 98 | To determine whether methadone maintenance alters intrapartum or postpartum pain or medication requirements | Methadone-maintained people have similar analgesic needs but require more opioids after cesarean delivery (70% higher) |
| Migliaccio 83 | 2017 | English | Single-center observational study |  | To describe use of N2O in laboring people with OUD | Nitrous oxide labor analgesia can be given safely to people under treatment for OUD |
| Mittal 78 | 2017 | English | Case series | 14 | To demonstrate the feasibility of a collaborative care model for pregnant people with OUD | Collaborative pain management planning during labor and delivery and postpartum is essential |
| Mozurkewich 59 | 2014 | English | Review |  | To describe differences in patient selection between selection of buprenorphine vs. methadone, their safety, and dosing guidelines | Buprenorphine therapy can create challenges to pain management because of its partial mu receptor agonist properties. Neuraxial analgesia/anesthesia is preferred. NSAIDs, acetaminophen, and non-opioid agents recommended. Buprenorphine and methadone should be continued throughout labor, delivery, and postpartum. |
| Ordean17 | 2013 | English | Retrospective chart review | 102 | To describe the characteristics of a national cohort of pregnant people on methadone maintenance treatment and to provide outcome data. | Study excluded patients with chronic pain. Integrated care programs are linked to significant decreases in substance use in pregnant opioid-dependent people. 45% had diagnosis of depression, 20% had diagnosis of anxiety, 35% reported physical or sexual abuse history (psychiatric comorbidities that affect pain experiences and analgesia effectiveness). Multidisciplinary approach to patient management is necessary |
| Pan 60 | 2017 | English | Review |  | To review recommendations for management of OUD in pregnancy | Recommendations were reviewed based on mode of delivery (cesarean vs vaginal) and exposure to opioid exposures (untreated OUD, chronic pain, opioid antagonist). Treatment options include NSAIDs, acetaminophen, neuraxial opioids, TAP, pudendal blocks, PCEA, NMDA antagonism, neurologics, opioids for breakthrough pain |
| Parad 84 | 2020 | English | Retrospective cohort study (abstract) | 249 | To determine whether people treated with buprenorphine reported increased pain scores post-cesarean or required higher doses of opioid analgesia than those on methadone | Pain scores were similar in both buprenorphine and methadone groups |
| Park 18 | 2012 | English | Review |  | To educate psychiatrists in emergency and obstetrical settings about the best approach to people with OUD in pregnancy | Maintenance doses of methadone and buprenorphine do not provide adequate labor analgesia. These medications should be continued during labor to avoid precipitating withdrawal. People receiving opioid agonist treatment report elevated pain scores and have greater opioid requirements. Additional therapies include short-acting opioids, NSAIDs. Adjunctive opioids can be used for pain control in buprenorphine-maintained patients. Most studies limited by absence of control groups. Stopping buprenorphine is possible but requires re-induction and risks return to use. No studies speaking to brief use of additional opioids and interference with recovery from addiction. Neuraxial analgesia/anesthesia emphasized. Avoid nalbuphine. Emphasized developing pain management plan with anesthesiologist prior to delivery. Multidisciplinary approach to patient management is necessary, prenatal anesthesia consultation can be part of that management. |
| Pritham 61 | 2014 | English | Review |  | To review data on management of maternal pain in patients with OUD | Development of a pain management protocol for pregnant people with pain and OUD is necessary. Reviewed use of over-the-counter analgesics, opioids, opioid substitution therapies, complementary and alternative therapies, antidepressants, anxiolytics. |
| Raymond62 | 2018 | English | Review |  | To summarize data on adverse maternal, fetal, and neonatal effects of opioid exposure during pregnancy and treatment of OUD | Pregnant people with chronic pain typically continue to take opioids during pregnancy. Multimodal adjuncts are important alternatives for pain. |
| Reddi 19 | 2013 | English | Case report (poster) | 1 | To report peripartum management of a woman with opioid-dependent chronic pain | Recommends multidisciplinary approach to pain management. Multidisciplinary approach to patient management is necessary, prenatal anesthesia consultation can be part of that management. |
| Robertson20 | 2011 | English | Retrospective chart review (Abstract) | 2949 | To determine the demographics and labor ward needs of pregnant people with OUD and to compare with data from 12 years previously | There was a significantly higher emergency cesarean rate among people with OUD. This type of delivery has implications for pain management. Multidisciplinary approach to patient management is necessary, prenatal anesthesia consultation can be part of that management. |
| Safley70 | 2017 | English | Review |  | To review guidelines for obstetrical care of pregnant people with OUD | The reviewer recommends a multidisciplinary approach to pain management for pregnant people with OUD. Consensus appears to exist for continuing opioid maintenance therapy throughout pregnancy and postpartum; adequate acute pain management necessity; contraindication of opioid agonist-antagonists for pain management. |
| Sander 37 | 2005 | English | Retrospective chart review | 94 | To examine demographics and patterns of opioid addiction in pregnant people admitted to an inpatient psychiatry unit | Findings demonstrate the need for further research on pain medications for patients with OUD. |
| Schulman21 | 1993 | English | Observational study | 252 | To assess the prevalence of drug use among parturients in a municipal hospital | Selective testing failed to identify 42% of newborns of cocaine-positive people. Screening may have a role in anticipatory management of maternal pain and addiction. Multidisciplinary approach to patient management is necessary |
| Sen63 | 2016 | English | Review |  | To review recommendations for treatment of postoperative pain in patients on methadone and buprenorphine. | Building pre-surgery alliance between patient and anesthesiology service is necessary to develop pain management plan. Considerations are weighed on continuing vs discontinuing methadone, buprenorphine in the perioperative period. For pregnant patients, methadone or buprenorphine therapy should be continued; mixed agonist-antagonists should be avoided due to risk for precipitating withdrawal. Pain management in labor, delivery and postpartum can consist of neuraxial analgesia/anesthesia, NSAIDs and acetaminophen, divided doses of buprenorphine in labor. |
| Shainker 45 | 2012 | English | Review |  | To discuss incidence, risks, pregnancy complications, and maintenance options for pregnant people with OUD | Postpartum pain is magnified. Authors do not recommend changing intrapartum pain management from general obstetric population. Comprehensive postpartum care including transition to addiction specialists is recommended. |
| Silver82 | 1986 | English | Observational study (abstract) | 336 | To determine if people with OUD had normal patterns of labor and if standard intrapartum management was appropriate | People with OUD had 40% increased use of epidural analgesia: analgesia and anesthesia “in excess” of that given the average patient |
| Smith 22 | 2015 | English | Prospective cohort study | 2748 | To examine clinical and demographic factors associated with OUD in pregnancy | OUD in pregnancy was associated with higher levels of psychiatric comorbidity and other substances than non-opioid users. Psychiatric co-morbidities influence pain experience. Multidisciplinary approach to patient management is necessary |
| Soens23 | 2019 | English | Review |  | To review management strategies for patients with untreated OUD, treated OUD, and recovering addicts | The review concludes with suggestions for a multi-modal approach to obstetric analgesic care in this population. Multidisciplinary approach to patient management is necessary, prenatal anesthesia consultation can be part of that management. |
| Souzdalnitski5 | 2014 | English | Systematic review |  | To review management of pregnant people with OUD | Further study is needed to develop evidence-based pain management recommendations for pregnant patients with chronic pain. Avoid abruptly stopping opioids or giving mixed opioid agonist-antagonists. Escalation of opioid doses may be needed for patient satisfaction but may trigger return to use. |
| Stanhope71 | 2013 | English | Review |  | Review of strategies for antepartum, intrapartum, and postpartum management of people with OUD | Consider referring to pain rehabilitation provider if available in the prenatal period. Team approaches with experts in addiction management, social work, pain, and pediatrics are needed. |
| Stanislaus 87 | 2020 | English | Case report |  | Use of continuous epidural hydromorphone for post-cesarean pain in a woman with OUD | Continuous epidural hydromorphone infusion (140mcg/hour x 40 hours with PCA demand 20mcg, 30-minute lockout) was successful and reduced average daily oral opioid consumption by 97% and self reported pain scores, shortened hospital stay, and improved ability to ambulate compared to prior cesarean delivery. Did not report on monitoring requirements, sedation, return to bowel function adverse effects such as pruritus and respiratory depression |
| Tabi24 | 2019 | English | Preliminary open-label case series | 25 | To determine the effect of buprenorphine and drug use-targeted psychotherapy on cessation of addictive drug use. | Buprenorphine plus psychotherapy helped people with OUD stop tobacco use (co-morbid with pain conditions). Opioid induced hyperalgesia was demonstrated with cold pressor test. Multidisciplinary approach to patient management is necessary |
| Thakrar38 | 2020 | English | Clinical vignette |  | To illustrate the importance of a multidisciplinary approach to pregnant people with OUD | A multidisciplinary approach to pain management in people with OUD is best. |
| Tith 76 | 2018 | English | Retrospective chart review | 8 | Description of management of eight OUD patients | Pain management is complex and heterogeneous in patients receiving buprenorphine therapy. Neuraxial techniques are common but limit postoperative ambulation. The authors use intravenous ketamine as rescue medication for intractable pain but only in postpartum wards. Intravenous opioids were offered. Protocols with flexibility could be helpful. |
| Towers25 | 2019 | English | Prospective cohort study | 411 | To evaluate psychosocial history and social factors associated with pregnant people with OUD | History of abuse was the main precipitating event leading to OUD. Chronic pain with inappropriate opioid over-prescribing was a minor finding in pregnant OUD population. No recommendations for pain management were made. Multidisciplinary approach to patient management is necessary |
| Tran 64 | 2017 | English | Review |  | To compare treatment options for pregnant people with OUD, including methadone, buprenorphine, and naltrexone | More information is needed regarding postnatal effects of OUD treatments in pregnancy. Changes in pain sensitivity and behavioral responses are possible in children born to mothers receiving opioids. Experts agree on the need for pain relief during pregnancy and postpartum periods. |
| Vilkins 85 | 2017 | English | Retrospective cohort study | 273 | To compare post-cesarean opioid analgesic requirements in people with OUD treated with methadone or buprenorphine | Buprenorphine treatment and methadone treatment are not significantly different for post-cesarean opioid analgesic requirements or hospital length of stay |
| Vilkins 46 | 2016 | English | Retrospective cohort study (abstract) | 195 | To compare post-cesarean opioid analgesic requirements in people with OUD treated with methadone or buprenorphine | People maintained with buprenorphine had lower opioid requirements postpartum than those maintained with methadone after cesarean delivery |
| Wasiluk 88 | 2011 | English | Letter to the editor |  | To demonstrate use of post-operative dexmedetomidine in a patient on methadone | Dexmedetomidine may be effective for postoperative pain in people with OUD |
| Wendling47 | 2020 | English | Retrospective chart review | 2693 | To test the hypothesis that opioid-naïve patients have less pain and use less morphine equivalents than people on opioid agonist therapy; and that people on buprenorphine have more pain and use more morphine equivalents than patients maintained on methadone | Opioid-naïve patients have less pain and use less morphine equivalents. People receiving buprenorphine do not experience more pain or use more morphine equivalents compared to patients receiving methadone |
| Wiegand 26 | 2014 | English | Retrospective chart review | 37 | To compare maternal/neonatal outcomes among people with OUD prescribed buprenorphine/naloxone vs. methadone during pregnancy | More women had pain diagnosis in methadone group. Groups were similar for smoking and psychiatric diagnosis at delivery (comorbid conditions with pain). Use of buprenorphine/naloxone was associated with lower incidence of neonatal abstinence syndrome, lower peak NAS scores, and shorter newborn hospitalization. Multidisciplinary approach to patient management is necessary |
| Wilder27 | 2015 | English | Review |  | To review outcomes following maternal treatment with buprenorphine | People who had opioids prescribed for chronic pain were likely to have their pain medication discontinued during pregnancy, which comes with risks associated with rapid tapering including precipitating withdrawal. Authors recommend that women with chronic pain who need opioids be maintained on a consistent dose of a long-acting opioid to reduce fetal stress. Multidisciplinary approach to patient management is necessary |
| Wolman 39 | 1989 | English | Review | 5 | To report on five representative cases of OUD in pregnancy with a discussion of the associated hazards and complications. | Acute detoxification is associated with fetal response evidenced by rising amniotic epinephrine and norepinephrine levels during detoxification treatment. Therefore, detoxification in last trimester of pregnancy was recommended to be avoided. A set of recommendations is proposed for intrapartum and postpartum management of people with OUD and their newborns. No pain management recommendations were discussed. |
| Wong 28 | 2011 | English | Practice Guidelines |  | To provide evidence-based recommendations for management of substance use in pregnancy. | People with OUD have increased pain sensitivity, inadequate analgesia, anxiety about suffering pain. Inappropriate pain management is more likely than providing opioid analgesia for treatment of acute pain to lead to return to use. Continue same dose of methadone but these doses are ineffective for acute pain management. Opioids are safe and effective even in opioid-dependent people, but they may need higher doses and more frequent doses for pain relief. Epidural analgesia is idea. Do not give agonist-antagonists. Refer to an anesthesiologist in advance of delivery. Multidisciplinary approach to patient management is necessary |
| Young74 | 2014 | English | Review |  | A Review of the management of pregnant people with OUD | Intrapartum pain management is not different from routine obstetric patient. Hyperalgesia and opioid tolerance are possible. Ketamine and cyclo-oxygenase inhibitors (synergistic with NMDA receptor antagonists) may help. Continue opioid maintenance therapy. Encourage breastfeeding. Neuraxial analgesia is effective for labor and delivery and post-cesarean delivery analgesia. Prospective trials are needed. |