Opiate Use in Pregnancy: Its Impact on Patients and the Nurses Who Care For Them

James Walsh, MD
Medical Director
Addiction Recovery Services
Swedish Medical Center - Ballard
I have no financial disclosures or conflicts of interest to report.

Jim Walsh, MD
Talking about Drug Use in Pregnancy

The mother is more scared than you are.
Talking about Drug Use in Pregnancy

The mother is more scared than you are.

The mother wants prenatal care.

The mother is desperate to hear that the baby is OK.
Substance Use in Pregnancy

Is the baby OK?

Fetal Alcohol Syndrome
Is the baby OK?

Teratogenic effect
probably only with alcohol

cocaine in first trimester?
incidence of birth defects equal to
non-exposed infants

Arch Pediat Adolesc Med 2005 Sep; 159; 824-834
Acute Neonatal Effects of Cocaine Exposure During Pregnancy
Bauer CR
Substance Use in Pregnancy

Is the baby OK?

Placental Insufficiency
IUGR, preterm delivery, abruption due to vaso-constriction

risks increase toward end of term caused by:
cocaine, methamphetamine, nicotine & CO

Paediatr Perinat Epidemiol 1996 Jul; 10(3):269-78
Cocaine and cigarettes: a comparison of risks.
Kistin N, Handler A
Substance Use in Pregnancy

Is the baby OK?

Placental Insufficiency
On average, baby of mother continuing to use cocaine into 3rd trimester is 1 lb smaller than non users, but still within normal limits

"my cousin used the whole pregnancy and her baby was fine"

Arch Pediat Adolesc Med 2005 Sep; 159; 824-834
Acute Neonatal Effects of Cocaine Exposure During Pregnancy
Bauer CR, Langer JC
Substance Use in Pregnancy

Is the baby OK?

Developmental Problems?

*Probably not*

- Excluding alcohol, deficits in global assessments (IQ, Bayley) have not been clearly attributed to substances
- It is difficult to find a proper comparator group
- Some subscores in some subsets of children have been statistically significantly below normal

*All studies confirm that growing up in a using household impacts intelligence and emotional well being*

*JAMA 2001 March 28; 285(12):1613-1625*

Growth, Development, and Behavior in Early Childhood Following Prenatal Cocaine Exposure: A systematic review
Frank DA, Augustyn M
Talking about Drug Use in Pregnancy

The mother is more scared than you are.

The mother wants prenatal care.

The mother is desperate to hear that the baby is OK.

An intersection of increased motivation & increased opportunity for change.
Screening for Substance Use in Pregnancy

How to Ask?

4 P's
- Parents
- Partner
- Past
- Pregnancy
Screening for Substance Use in Pregnancy

Urine Drug Test?

People don’t usually lie, but....
Screening for Substance Use in Pregnancy

Urine Drug Test?

People don’t usually lie, but....

Random urine testing will increase yield 50%
Screening for Substance Use in Pregnancy

Urine Drug Test?

Who should I test?
Is consent required?
False positive tests?
Screening for Substance Use in Pregnancy

Urine Drug Test?

Who should I test? everybody
Is consent required?
False positive tests?
Screening for Substance Use in Pregnancy

Urine Drug Test?

Who should I test? Everybody
Is consent required? Yes
False positive tests? Can Occur
Screening for Substance Use in Pregnancy

What if the screen is positive?

Clinic physician / social worker
Maternal Support Services (MOMS PLUS)
Case Management: PCAP "Safe Moms, Safe Babies"
Outpatient Treatment
Inpatient Treatment "rehab"
Residential Long Term Treatment
Screening for Substance Use in Pregnancy

What if the screen is positive?

Clinic physician / social worker
Maternal Support Services (MOMS PLUS)
Case Management: PCAP "Safe Moms, Safe Babies"
Outpatient Treatment
Inpatient Treatment "rehab"
Residential Long Term Treatment

Opiate Maintenance Treatment
Screening for Substance Use in Pregnancy

What if the screen is positive?

Contacts

Inpatient Treatment:
Swedish Medical Center - Ballard Campus
Addiction Recovery Service
206 781-6209

Highline Medical Center  206 -248-2787
Grays Harbor Community Hospital  360 553-8500
Screening for Substance Use in Pregnancy

What if the screen is positive?

King County Contacts

Outpatient Treatment:

Recovery Centers of King County 206 322-2970
New Traditions West Seattle 206 762-7207

Sound Mental Health - Bellevue 206 302-2200
Therapeutic Health Services 425 747-7892
Screening for Substance Use in Pregnancy

What if the screen is positive?

Kitsap County Contacts

Outpatient Treatment:

- Kitsap Recovery Center  360 337-4625
- Agape Unlimited  360 373-1529
Screening for Substance Use in Pregnancy

What if the screen is positive?

Pierce County Contacts

Outpatient Treatment:

MOMs Program (253) 798-6655
Screening for Substance Use in Pregnancy

What if the screen is positive?

Thurston County Contacts

Outpatient Treatment:
Providence St. Peter Chemical Dependency Center
360 456-7575

SeaMar Behavioral Health
360 570-825
Screening for Substance Use in Pregnancy

What if the screen is positive?

Whatcom County Contacts

Outpatient Treatment:

SeaMar 360 734-5488
Catholic Community Services 360 676-2187
Lummi Counseling Service 360 384-2330
West Coast Counseling 360 647-7577
Screening for Substance Use in Pregnancy

What if the screen is positive?

King County Contacts

Case Management:
Parent Child Assistance Program PCAP
206 543-7155

King County MOMS Plus Program
206 298-7480
Screening for Substance Use in Pregnancy

What if the screen is positive?

Kitsap County Contacts

Case Management:
Parent Child Assistance Program PCAP
360 377-0370
Screening for Substance Use in Pregnancy

What if the screen is positive?

Pierce County Contacts

Case Management:
Parent Child Assistance Program PCAP
253-475-0623
Screening for Substance Use in Pregnancy

What if the screen is positive?

Thurston County Contacts

Case Management:
Maternal Child Health Program Assistant at
(360) 867-2548
Screening for Substance Use in Pregnancy

What if the screen is positive?

Whatcom County Contacts

Case Management:
Maternity Support Services MSS
Whatcom County Health Dept 360 676-6762

Safe Babies, Safe Moms Whatcom County
Brigid Collins Family Support Center
360 734-4616
Screening for Substance Use in Pregnancy

What if the screen is positive?

Methadone Maintenance:
  Seattle
    Therapeutic Health Service  206 323-0930
    Evergreen Treatment Service  206 223-3644
  Tacoma/Pierce County Treatment Services  253 798-6405
  Olympia -  South Sound Clinic    360 413-6910
  Yakima - Central WA MH     509 574-5103
  Vancouver - Columbia River MN  360 993 3003
  Arlington - Island Crossing   360 652-9640
  Spokane Regional Health Dist  509 324-1420

  CRC Health Group                     866 353-2683
    Tacoma, Renton, Bothell, Spokane, Vancouver
Substance Use in Pregnancy

CPS?

Legal requirements to report perinatal substance abuse?
Substance Use in Pregnancy

CPS?

Legal requirements to report perinatal substance abuse: None!
CPS?

Hospitals are encouraged to report all positive toxicology screens (mother or infant) to Child Protective Services. Reporting of this information, in and of itself, is not an allegation of abuse or neglect. The healthcare team acts as advocate for mother and newborn.

If there exists reasonable cause to believe leaving a newborn in the custody of the child’s parent or parents would place the child in danger of imminent harm, a hospital may choose to place an administrative hold on the newborn and notify Child Protective Services.
Substance Use in Pregnancy

Opiates

Opiates do not cause birth defects, or placental insufficiency.

Opiate dependence develops in the mother and fetus.

Opiate withdrawal has potential risks in pregnancy.

Am J Obstet Gynecol 1975 M1; 122(1)43-6
Fetals stress from methadone withdrawal
Zuspan FP, Gumpel JA
## Substance Use in Pregnancy

### Opiate Withdrawal

<table>
<thead>
<tr>
<th>Early</th>
<th>Severe</th>
<th>Fetal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agitation</td>
<td>Abdominal cramping</td>
<td>increased movements</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Diarrhea</td>
<td>passage of meconium</td>
</tr>
<tr>
<td>Muscle aches</td>
<td>Dilated pupils</td>
<td>bradycardia</td>
</tr>
<tr>
<td>Increased</td>
<td>Goose bumps</td>
<td>miscarriage</td>
</tr>
<tr>
<td>tearing</td>
<td>Nausea</td>
<td>preterm delivery</td>
</tr>
<tr>
<td>Insomnia</td>
<td>Vomiting</td>
<td>intra-uterine fetal demise</td>
</tr>
<tr>
<td>Runny nose</td>
<td></td>
<td>(stillbirth)</td>
</tr>
<tr>
<td>Sweating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yawning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Am J Obstet Gynecol 1985 Feb 15; 151(4):441-4
Precipitated Opiate Withdrawal In Utero
Umans JG, Szeto HH
Substance Use in Pregnancy

Opiates

Methadone Maintenance leads to improved perinatal outcomes compared to women who continue active drug use.

*The dilemma of methadone maintenance in pregnancy is we have to accept that opiate addiction is a real problem that we can neither wish nor will away.*

JAMA 1976 Mar 15; 235(11)1121-4
Narcotic Dependence in Pregnancy. Methadone maintenance compared to street drugs
Stimmel B, Adamsons K
Substance Use in Pregnancy

Opiates

Is it safe to detox in pregnancy?

- Information available is mostly anecdotal.
- No known way to ensure fetal safety.
- Intrauterine deaths are likely very infrequent.
- Risk is probably less in the second trimester.
- Severity of maternal symptoms may not be a gauge of fetal distress.
- Relapse to active drug use is the usual outcome.


Is opiate detoxification unsafe in pregnancy?

Luty J, Nikolaou V, Bearn J.
Substance Use in Pregnancy

Opiates

Methadone Maintenance

*For non-pregnant patients, goal is a dose that extinguishes opiate use, typically 80-120 mg once a day.*

For pregnant patients, goal is a dose that prevents withdrawal symptoms. This can be a wide range from 10 - 200 mg daily or divided BID
Substance Use in Pregnancy

Opiates

Methadone Maintenance

Outcomes:
- Improved birth weight
- Reduced preterm delivery
- Neonatal Abstinence Syndrome

Is the baby's brain OK?
Is the baby born addicted?

Addiction (1997) 92(11) 1571-1579
The relationship between maternal use of heroin and infant birth weight
Hulske GE, Milne E
Substance Use in Pregnancy

Opiates

Buprenorphine Maintenance
very high affinity,
partial agonist (agonist - antagonist)
at the mu opiate receptor.
Substance Use in Pregnancy

Opiates

Buprenorphine Maintenance
"Suboxone Waiver"

Suboxone = sublingual buprenorphine / naloxone
8 mg / 2 mg & 2 mg / 0.5 mg

Subutex = sublingual buprenorphine (only)
8 mg & 2 mg
Substance Use in Pregnancy

Opiates

Buprenorphine Maintenance
very high affinity, partial agonist (agonist - antagonist) at the mu opiate receptor.

Starting: patient must be already in withdrawal, have more unoccupied than occupied opiate receptors, or initial dose will generate acute opiate withdrawal.
Substance Use in Pregnancy

Opiates

Buprenorphine Maintenance
very high affinity, partial agonist (agonist - antagonist) at the mu opiate receptor.

Ceiling: at a dose of 16 - 24 mg sublingual per day, all opiate receptors are occupied, even though agonist effect is only equal to approx 30 mg of methadone
Substance Use in Pregnancy

Opiates

Buprenorphine Maintenance
very high affinity, partial agonist (agonist - antagonist) at the mu opiate receptor.

**Blocking**: other simple opiate agonists will not displace buprenorphine from the opiate receptor and thus have no effect
Substance Use in Pregnancy

Opiates

Buprenorphine Maintenance
Perinatal outcomes equivalent to methadone
Less Neonatal Abstinence

DSHS has begun to cover buprenorphine in pregnancy as of December 2011, with restrictions
  specialty consultation
  participation in treatment
  post partum time limits
Neonatal Abstinence Syndrome after Methadone or Buprenorphine Exposure

Hendrée E. Jones, Ph.D., Karol Kaltenbach, Ph.D., Sarah H. Heil, Ph.D., Susan M. Stine, M.D., Ph.D., Mara G. Coyle, M.D., Amelia M. Arria, Ph.D., Kevin E. O'Grady, Ph.D., Peter Selby, M.B., B.S., Peter R. Martin, M.D., and Gabriele Fischer, M.D.
### Neonatal Abstinence Syndrome after Methadone or Buprenorphine Exposure

Double blind, double dummy, randomized

<table>
<thead>
<tr>
<th># Babies</th>
<th>Treated for NAS</th>
<th>Peak Score</th>
<th>Total cum. morphine dose</th>
<th>Length of NAS treatment</th>
<th>Total LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buprenorphine</td>
<td>58</td>
<td>47%</td>
<td>11.0</td>
<td>1.4 mg</td>
<td>4.1 days</td>
</tr>
<tr>
<td>Methadone</td>
<td>73</td>
<td>57%</td>
<td>12.8</td>
<td>10.4 mg</td>
<td>9.9 days</td>
</tr>
</tbody>
</table>
Substance Use in Pregnancy

Opiates

Methadone vs. Buprenorphine Maintenance

Convenience
Sobriety
Substance Use in Pregnancy

Opiates

Methadone / Buprenorphine Maintenance

Prenatal Care

- high risk monitoring?
- patient reassurance
- working with family members

the methadone clinic will take care of methadone dose adjustments
Substance Use in Pregnancy

Opiates

Methadone / Buprenorphine Maintenance

Intrapartum Care

continue methadone or buprenorphine at current dose
Substance Use in Pregnancy

Opiates

Methadone / Buprenorphine Maintenance

**Intrapartum Pain Management**

Maintenance medication does not prevent or reduce pain.

Additional opiates are less effective but not ineffective for buprenorphine patients, high affinity opiates such as fentanyl & hydromorphone (Diludid) may work better than morphine.

Epidural and spinal & local anesthesia work normally.
Substance Use in Pregnancy

Opiates

Methadone / Buprenorphine Maintenance

Post partum Care

continue current methadone dose
  discharge will have to be coordinated with
  Methadone Maintenance Clinic

continue current buprenorphine dose
  Subutex may be changed to Suboxone
Substance Use in Pregnancy

Opiates

Methadone / Buprenorphine Maintenance

Post Partum Pain Management after vaginal delivery

NSAIDS may be more effective than opiates

Short acting opiates are not likely to cause relapse, maintenance therapy prevents this, unless prescribed in a very large quantity
Substance Use in Pregnancy

Opiates

Post Cesarean Section Pain Management

Methadone Maintenance

• continue current methadone dose
• methadone maintenance dose does not prevent pain
• opiates are less effective but not ineffective

short acting opiates should be used for pain relief
very high doses may be needed
Substance Use in Pregnancy

Opiates

Post Cesarean Section Pain Management
Methadone Maintenance

Hydromorphone PCA
0.6 - 2 mg dose
q 8 minutes
No maximum dose
Nurse bolus 1-2 mg

"if the patient is breathing it's not too much"
Substance Use in Pregnancy

Opiates

Post Cesarean Section Pain Management
Methadone Maintenance

in addition to overcoming opiate tolerance
we have to overcome
the patient's fear of under treatment

aggressive early treatment reduces
overall opiate requirement

"if the patient is breathing it's not too much"
Substance Use in Pregnancy

Opiates

Post Cesarean Section Pain Management
Buprenorphine Maintenance

high affinity opiates:
  fentanyl & hydromorphone
  aggressive dosing
Substance Use in Pregnancy

Opiates

Post Cesarean Section Pain Management
Buprenorphine Maintenance

Use NSAIDS whenever safe

Epidural morphine has appeared to be quite effective in a small number of patients, likely due to intrathecal concentrations high enough to displace buprenorphine
Substance Use in Pregnancy

Opiates

Breast Feeding on Methadone?

Breast Feeding on Buprenorphine?

Yes!
Substance Use in Pregnancy

Opiates

Breast Feeding on Methadone?

The amount of methadone delivered to a baby via breast milk is less than 1% of the morphine given to treat neonatal abstinence

J Human Lactation 2004; 20; 62
Methadone Maintenance and Lactation: A Review of the Literature and Current Management Guidelines
Jansson LM, Velez M
Breast Feeding on Buprenorphine?

Studies of breast milk show exposure to be low. As oral bioavailability is low, even less absorbed. No evidence of harm in several very small series.

Buprenorphine and metabolites have been found in infant urine. No infant serum levels have been reported.

J Hum Lactat 2009; 25; 199
Transfer of Buprenorphine into Breast Milk and Calculation of Infant Dose
Lindemalm S; Nydert, P
Substance Use in Pregnancy

Who should do the prenatal care?

- OB?
- Perinatology / MFM?
- Family Medicine?
  - Community Health Center
- Comprehensive Specialty Clinic
  - OB Outreach Prenatal Clinic
Substance Use in Pregnancy

Who should do the prenatal care?

• OB?
• Perinatology / MFM?
• Family Medicine?
  o Community Health Center
• Comprehensive Specialty Clinic
  o OB Outreach Prenatal Clinic
http://www.addictionrecoveryservice.net/presentations
References

Accornero 2002
Behavioral outcome of preschoolers exposed prenatally to cocaine: role of maternal behavioral health J Pediatr Psychol. 2002 Apr-May; 27(3):259-69

Bauer 2005
Acute Neonatal Effects of Cocaine Exposure During Pregnancy Arch Pediat Adolesc Med 2005 Sep; 159; 824-834

Fergusson 2002

Frank 2001
Prevalence, stability and predictors of clinically significant behavior problems in low birth weight children at 3, 5, and 7 year of age. Pediatrics 2004 Sep; 114(3): 736-43


The maternal lifestyle study: cognitive, motor, and behavioral outcomes of cocaine exposed and opiate-exposed infants through three years of age. Pediatrics 2004 June, 113(6): 1677-85
References

Prevalence, stability and predictors of clinically significant behavior problems in low birth weight children at 3,5, and 7 year of age. Pediatrics 2004 Sep; 114(3): 736-43


The maternal lifestyle study: cognitive, motor, and behavioral outcomes of cocaine exposed and opiate-exposed infants through three years of age. Pediatrics 2004 June, 113(6): 1677-85
References


References


The earliest mention of “congenital addiction” was reportedly made by F.B. Earle (1888). Subsequent reports in the 1890s delineated the syndrome of neonatal withdrawal, and in 1894 a physician wrote of the need to treat opiate-exposed infants after birth with morphine or “they are apt to suffer collapse, and their condition may end in death” (Fischer 1894, p. 199).

Women and Addiction in the United States—1850 to 1920 Stephen R. Kandall, M.D

Fetal stress from methadone withdrawal.
Zuspan FP, Gumpel JA, Mejia-Zelaya A, Madden J, Davis R.
Abstract
A pregnant patient in the midtrimester of pregnancy was begun on a methadone detoxification program. The fetal neurobiologic response was monitored by serial amniotic fluid amines (epinephrine and norepinephrine). The detoxification program showed a marked fetal response of the adrenal gland (E) and sympathetic nervous system (NE) that was blunted when the methadone dose was increased. Detoxification during pregnancy is not recommended unless the fetus can be biochemically monitored.
PMID: 1130446 [PubMed - indexed for MEDLINE]

Narcotic withdrawal in pregnancy: stillbirth incidence with a case report.
Rementeriá JL, Nunag NN.
PMID: 4721145 [PubMed - indexed for MEDLINE]
OBJECTIVES:
Methadone maintenance treatment (MMT) is the standard treatment of choice for pregnant opiate addicts; however, data on newborn outcomes are contradictory. We studied the effect of the timing of starting MMT and of MMT related drug abstinence on the outcome of newborns of former and current opiate-addicted pregnant women.

METHODS:
All babies (excluding repeated deliveries) of all pregnant women who were admitted to 1 MMT clinic between 1993 and 2008 were studied. Former opiate-addicted women who became pregnant while already on MMT (full-pregnancy MMT, FP-MMT) and opiate-addicted women who only started MMT during pregnancy (partial-pregnancy MMT, PP-MMT) were retrospectively compared for birth weight and gestational age of newborns. Abstinence was defined as negative urine sample results for opiates, cocaine, amphetamines, benzodiazepine and cannabis during the month before delivery.

RESULTS:
We examined 59 newborn babies: 14 in the FP-MMT group and 45 in the PP-MMT group. The mean birth weight was 2733.2 ± 392.0 g versus 2240.0 ± 680.4 g respectively (F[1] = 6.6, P = 0.01). Abstinence was determined among 73.3% of the FP-MMT and 28.6% of the PP-MMT (P = 0.004). Gestational age was higher in the abstinence (37.9 ± 2.8 weeks) versus no-abstinence group (35.8 ± 4.6 weeks; F[1] = 4.4, P = 0.04).

CONCLUSIONS:
The best pregnancy outcome, characterized by a higher gestational and birth weight, was associated with a longer duration on MMT and substance abstinence, emphasizing the importance of MMT stabilization before and during pregnancy.
PMID: 21817914 [PubMed - indexed for MEDLINE]
Outcomes of neonates conceived on methadone maintenance therapy.

McCarthy JJ, Leamon MH, Stenson G, Biles LA.

Source
Department of Psychiatry and Behavioral Science, University of California, Davis, Sacramento, CA 95817, USA.

Abstract
To assess potential risks related to the duration or total amount of fetal methadone exposure during gestation, we compared babies of women who conceived and maintained on methadone throughout pregnancy with babies of women who began methadone treatment during the second or third trimester. Babies conceived on methadone were exposed to the medication for a mean of 37.4 weeks at a mean dose of 110 mg/day, whereas comparison babies were exposed for a mean of 13.1 weeks at a mean dose of 93 mg/day. There were no significant between-group differences in the frequency of treatment of neonatal abstinence, days hospitalized, birth weight, or gestational age. Babies conceived on methadone were significantly less likely to test positive for illicit drugs at delivery as compared with babies conceived off methadone (positive toxicology, 9.1% vs. 34.3%, respectively). Methadone exposure during the entire gestational period was associated with better drug-treatment outcomes but was not associated with more severe neonatal abstinence.

PMID: 18077124 [PubMed - indexed for MEDLINE]
The relationship between maternal use of heroin and methadone and infant birth weight.
Hulse GK, Milne E, English DR, Holman CD.
Source
Faculty of Medicine and Dentistry, University of Western Australia, Australia. ghulse@cyllene.uwa.edu.au
Abstract
AIMS/DESIGN:
Reduction in mean birth weight and increased incidence of low birth weight are both associated with exposure to illicit heroin in pregnancy. Many studies examining neonatal outcomes in pregnant heroin users treated with methadone report improvements in birth weight. As a consequence, methadone treatment has become the 'gold standard' for the management of the pregnant heroin user. However, not all studies report significant birth weight increases associated with methadone. We undertook a number of meta-analyses on reduction in mean birth weight and incidence of low birth weight to estimate more precisely the effect of illicit heroin and methadone.
FINDINGS:
Results showed mean reduction in birth weight associated with heroin use: 489 g (95% CI 284-693 g), compared with methadone: 279 g (229-328 g). Similarly, the pooled relative risk estimate for low birth weight for maternal heroin use was 4.61 (95% CI 2.78-7.65), compared with 1.36 (0.83-2.22) for methadone. Analysis of data on combined heroin and methadone use produced a pooled mean reduction in birth weight of 557 g (403-710 g), with a pooled relative risk estimate for low birth weight of 3.28 (2.47-4.39). Pooling 'any' methadone data, regardless of heroin use, produced an estimated reduction in birth weight of 395 g (311-478 g) and a relative risk estimate for low birth weight of 1.90 (1.29-2.81). Combining all data in an 'any' opiate use analysis also produced a mean reduction in birth weight of 483 g (386-583 g) and a relative risk estimate for low birth weight of 3.81 (2.57-5.65).
CONCLUSIONS:
The current findings suggest that heroin use while receiving methadone may counteract the birth weight advantage gained from methadone alone. Whether this is due to fetal exposure to heroin plus methadone, to reduced antenatal care, other behavioural and environmental factors associated with concurrent use of heroin and methadone or a combination of these is unclear. Nevertheless, these results challenge the current belief that the pregnant user is always better off receiving methadone than not, and suggests that methadone may not be the appropriate treatment for the pregnant women who continue to use illicit heroin.
PMID: 9519499 [PubMed - indexed for MEDLINE]
Narco4c dependency in pregnancy. Methadone maintenance compared to use of street drugs.
Stimmel B, Adamsons K.
Abstract
The course of pregnancy and delivery in 28 women under closely supervised methadone maintenance (group 1) was compared with that of 57 women using heroin or methadone under less controlled circumstances (group 2) and with that of 30 women free of mood-altering medications (group 3). Women in group 1 had the lowest incidence of coexisting medical problems (p=.025), with an incidence of fetal distress not statistically different from that of women in group 3. Infants born to women group 2 had the highest fetal distress (p less than.05), with four congenital defects, one stillbirth, and one neonatal death. Symptoms characteristic of narcotic withdrawal occurred with similar frequency in group 1 and 2 infants, appearing earlier in children whose mothers were users of heroin. These findings indicate that maintenance of the pregnant addict under closely supervised methadone therapy is compatible with an uneventful pregnancy and birth of a healthy infant whose withdrawal symptoms in the neonatal period are readily controllable.
PMID: 946208 [PubMed - indexed for MEDLINE]