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Adolescent Pregnancy

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Introduction:

Hi, my name is Delphine Hansen and I am a third-year medical student at McGill University, Montreal, Quebec. In this episode, I will present an overview of the topic of adolescent pregnancy. This podcast was made in conjunction with *PedsCases*. I would also like to thank my supervisor, Dr. Giuseppina Di Meglio, adolescent medicine physician and pediatrician at the Montreal Children Hospital and professor at McGill University Faculty of Medicine.

Objectives:

First, let's review the objectives for this session. The objectives of this podcast include:

1. Discuss the current epidemiology of adolescent pregnancies in Canada and worldwide.
2. Identify key clues that should spark suspicion for pregnancy in an adolescent patient.
3. Review the physiological and psychosocial risks inherent to adolescent pregnancies at every stage of the pregnancy.
4. Discuss the importance of a multidisciplinary team approach and adolescent-friendly clinic in caring for the sexual health of adolescents and their children.
5. Review the key points of the management of adolescent pregnancy antenatally, at delivery and postnatally.
6. Consider the potential role of the father in adolescent pregnancy.

Clinical Case

Now let's begin with a clinical case:

Emily is a generally healthy 16-year-old girl presenting to your adolescent clinic today for secondary amenorrhea for the last two months. Emily learned about your adolescent clinic through pamphlets which were distributed by one of your outreach teams at her Highschool. You welcome her into the exam room and reassure her that your encounter is private and briefly review your provincial laws regarding confidentiality before gathering

her history. She is initially hesitant and shy but after a short discussion, she opens up and admit she is mildly worried about being pregnant. Her periods have never been very regular, varying between 25- and 35-day cycles, but now it's been two and a half months since she last bled. She is sexually active with her boyfriend, and they are using condoms, but she admits they sometimes only put it on halfway through intercourse or use the pull-out method when they run out. She confesses she believed she couldn't be fertile because "she's so young!" For the last two weeks, she has been

nauseated in the morning and feels bloated, but she thinks it might be related to being more stressed as exam period is coming up and her period is late.

On HEADSS assessment, you learn she lives with both parents and one older sister. She feels safe at home. She is in her last year of High school and is planning on attending university next year, with the goal of getting a nursing degree. She works part time at a Tim Hortons and plays soccer on the school's team. She started drinking alcohol occasionally this year at parties with friends but denies any drug use or smoking. Her current boyfriend Ethan is 19 years old, and they have been together for 9 months. He is her first sexual partner. She denies any intimate violence and their sexual life has always been consensual. She has never had an STI diagnosed but has never been screened and has never had a full gynecologic exam. She denies any suicidal thoughts.

You dig a little deeper and she admits she hasn't really thought about what she would do if she is in fact pregnant. She is unsure about keeping the pregnancy. She is afraid of telling her parents because she feels they would be very angry. She has not spoken of her fears to Ethan because she is afraid he might leave her.

How would you manage Emma's case?

Epidemiology

Let's start by reviewing the current epidemiology of adolescent pregnancy. In most literature, adolescent pregnancy is defined as a pregnancy occurring before age 20. Although adolescent pregnancies have been steadily decreasing for many decades in Canada, they remain between 1 and 3% of live births every year. In 2018 (most recent available Canadian data), there were approximately 6,700 infants born to adolescent mothers (representing 1.8% of all pregnancies), of which 55 were from mothers under 15 years of age[1].

Adolescent pregnancy also remains an important global health issue. Worldwide, it is estimated 21 million girls aged 15-19 years old become pregnant yearly, of which 12 million give birth[2]. In addition, it is estimated more than 777 000 girls aged less than 15 years old give birth every year[2]. It should be noted complications during pregnancy and childbirth remain the leading cause of death for 15 to 19 years-old girls globally[3].

Adolescent mothers and their children represent a vulnerable population with significantly increased risks for negative health outcomes. The mothers have an increased risk of mental

health disorders, STIs, substance use disorders, domestic violence and repeat pregnancies compared to their adult counterparts[4, 5]. The children of adolescent mothers, in turn, have higher rates of fetal demise, premature birth and low-birth weight. As they grow up, they are at higher risk of developmental issues (particularly cognitive, speech and language delays), of accidental injury and neglect[5], and of developing behavioral issues at home or in school. Children of adolescent mothers are again more at risk of substance abuse, early sexual activity, academic struggles, vocational and financial difficulties, and becoming adolescent parents themselves[4].

Research demonstrates that such poor outcomes are not directly associated to the age at which they become parents but mediated by poverty and other social determinants of health which tend to affect these adolescents disproportionately.

Caring for adolescents: Developing an adolescent-friendly practice

Now before we jump into talking about the management of adolescent pregnancy, let's discuss first how to design a clinic tailored for taking care of adolescents.

Many pregnant adolescents delay or avoid seeking appropriate and timely medical care, leading to poorer health outcomes for the adolescent-baby dyad[5, 6, 7]. Indeed, delay in seeking antenatal care is associated with adverse maternal, obstetrical and neonatal outcomes[6]. In caring for the adolescent population, it is thus paramount to promote outreach initiatives and build adolescent-welcoming clinics.

To facilitate access to care for adolescents, adolescent clinics should bear specific attention to offer same-day appointments as well as after-school hours and weekend availabilities[7, 8]. Some broadened allowance for missed or late appointments goes a long way to reach this population. Your practice can also become more adolescent friendly by offering confidential reminder calls (or texts), waiving any administrative fees and readily providing advocacy letters when helpful[5].

Adolescents often have heightened worries for confidentiality and privacy[4, 7, 8]. It is a good idea to have a statement on the confidentiality policy of the clinic and the applicable laws displayed in plain sight in the waiting area. The reception staff as well as the appointment reminder services should maintain privacy regarding reasons of consultation. The staff of the clinic should be trained to attend to the adolescent population, including a non-judgmental approach, a welcoming atmosphere, respect, and attention for confidentiality. The clinic should have counselling and exam areas providing visual and auditory privacy[7, 8].

Key information for adolescents seeking sexual health care should be displayed in plain, easy language on the walls or in public areas of your clinic. A review of your available services (e.g. STIs testing, pregnancy testing, rapid access to contraception) should be easily seen on location and be provided online. Information explaining how to get low-cost birth control and reminders that the services are available without a mandatory prior pelvic exam should also be visible in plain sight and/or disseminated[7]. If your clinic caters to adolescent parents, consider having educational pamphlets and resources at hand during clinical encounters, regarding topics like child and adolescents' health issues,

positive parenting examples, programs for early literacy, and education on healthy sexuality and healthy relationships[4, 7, 8]. Adolescent patients can be more appealed to real life examples or testimonies regarding their health issues; look for educational resources sharing the real life stories of adolescent parents, and examples, videos or stories of what healthy relationships looks like. Be a model of healthy and open communication yourself[9].

Healthcare care of adolescent mothers

Okay. Now that we know the epidemiology of adolescent pregnancy and how to design adolescent-friendly clinics, what are the best practices in managing adolescent mothers and their child?

Diagnosis

Pregnancy should be suspected and screened in all adolescents presenting with secondary amenorrhea; it should be noted that adolescents frequently delay seeking medical care until several menstrual periods have been missed and might be more reluctant to admit to being sexually active[10, 6].

Pregnancy can be diagnosed by urine or serum testing. However, serum testing is most sensitive to very low levels of bHCG and should therefore be preferred to urine tests when patient's expected periods are less than a week late. A positive urine test remains adequate for diagnosis of pregnancy, and a negative early urine test can simply be followed by a repeat test one week later to confirm negative results[11]. When pregnancy is confirmed, immediate gestational dating is important to allow for better planning. An ultrasound examination, if available, is recommended[10]. Note that sexual assault or coercion should be screened for in all pregnant adolescents [10].

The adolescent's plan for the pregnancy should be discussed in a nonjudgmental manner. The physician should remain attentive and keep the interview open to allow the adolescent the space to freely discuss her attitude toward the pregnancy. The wish of the adolescent to terminate the pregnancy should not be assumed. It should be appreciated that not all adolescent pregnancies are accidental and that even if the pregnancy is unplanned, the adolescent might not wish to terminate. Some adolescents might also wish to consider adoption or kinship, according to some cultures or backgrounds, it might be considered disrespectful or "unnatural" to medically alter one's fertility. Some adolescents purposefully choose to become parents because of personal, religious or cultural reasons. It should be highlighted that adolescents can become excellent parents[4, 6].

The available options should be laid out and discussed in an open and sensitive manner with the adolescent, including abortion (if below 20-24 weeks of gestation or the allowed gestational age according to province specific guidelines and available family planning care), parenting the child, putting the child in kinship care or having the child adopted[4, 5]. While the practitioner is bound by confidentiality and should strictly respect the adolescent's wishes, the adolescent should be encouraged to seek out the support of one or more family members in the decision making[10, 12]. It is advised to schedule another visit or a follow-up 24h to 48h after the diagnosis to ensure close follow-up[11].

If the adolescent chooses to terminate her pregnancy, it is important that she is referred immediately to a nonjudgmental abortion service. Follow-up is recommended to provide psycho-social support and subsequent contraceptive education and implementation[10].

Regardless of the adolescent's decision, consideration around whether enhanced psychological support is warranted and/or desired by the adolescent should be incorporated into the treatment plan. Appropriate referrals to mental health professionals or inclusion of those individuals in the multidisciplinary team is critical to provide comprehensive care and improve outcomes.[5]

Prenatal care

Adolescents who choose to continue their pregnancy benefit from being followed by a multidisciplinary team, ideally specialized in adolescent pregnancies. It has been demonstrated that multidisciplinary teams for adolescent antenatal care decreases preterm birth, low birth weights, and neonatal admissions[1, 6]. In addition to the physician, the multidisciplinary team can include a nurse, a nutritionist, and a social worker. As is the case for all pregnant women, the adolescent should be prescribed folic acid and should be counselled against the use of drugs, alcohol and smoking during pregnancy[11].

Pregnant adolescents are at particular risk for nutritional deficiencies[11]. They have increased nutritional needs compared to pregnant adults owing to the demands of adolescent growth and development. Adolescent mothers should be referred to a nutritionist for assessment and be prescribed vitamins and food supplements if indicated to reduce risk of anemia and low birth weight and to optimize pregnancy weight gain[6].

Adolescent mothers are at higher risk of dropping out of school and therefore, discussions regarding strategies to remain in school during and after pregnancy should be considered[5, 10]. An experienced social worker can help the adolescent attend medical appointments, access financial aid programs for young parents and enroll in specialized educational programs or negotiate accommodations with the current school to support the goal of graduating[11].

Pregnant adolescents should be screened more frequently for mood disorders, alcohol and substance use, STIs and interpersonal violence, as rates are higher in this vulnerable population[6, 10]. Routine and repeated screening is recommended regarding these issues[6]. Pregnant adolescents have higher rates of suicidal ideation both during pregnancy and in the postpartum period and are at greater risk of completed suicide than their adult counterparts[11]. For mood disorder screening, The Edinburg Postnatal depression scale can be administered in each trimester, postpartum, or more frequently if deemed necessary[6].

The threshold for STI testing should be lower in the pregnant adolescent, as compared to the adult, as the prevalence of STIs is much higher in the adolescent population. In addition, because adolescent mothers are at inherent higher risk for pre-term labor, pre-term birth and pre-term pre-labor premature rupture of membranes, screening and management of bacterial vaginosis (BV) is recommended at one of the early visits for pregnancy care and should be repeated in the third trimester. STI and BV testing should also be performed post-partum and whenever the patient has vaginal or vulvar symptoms[6].

The standard screening recommendations for adults[6] should be followed to monitor for gestational hypertensive disorders as well as gestational diabetes. In the second and third trimesters, visit frequency can be increased in the adolescent population as they have a higher risk of preterm labor and delivery. All healthcare workers should be aware of signs and symptoms of preterm labor and should review them with their adolescent pregnant patients at each second and third trimester visits[6].

Discussion regarding contraceptive is most effective early and should ideally be discussed prenatally, for example in the third trimester.

Education about contraceptives is paramount to decrease the high rate of repeat pregnancies in this population[11]. The different options for contraception in the adolescents will not be discussed in depth in this podcast, but you should keep in mind the following three important points[10]:

1. The best form of contraception is the one that the adolescent will use; thus, all adolescent patients should be informed of all the possible choices and their choice should be supported.
2. Recent studies have highlighted the safety, efficacy and popularity of long-acting contraceptive methods (LARCs) amongst adolescents, including subdermal implants (although those are not widely available in Canada as of yet), and intra-uterine devices (IUDs). These should be considered and offered as first-line contraception.
    a. IUDs can be inserted immediately after delivery and this option can be offered and discussed with the expecting adolescent mother.
3. It is important to remind adolescents that birth control methods other than condoms do not protect them against STIs. They should be encouraged to use condoms at every act of intercourse and get regular STI testing to reduce their risk of infections, especially if they have more than one intimate partner or change partners.

Perinatal care

It should be recognized that adolescent females have higher vaginal delivery rates and a lower risk of cesarean section than adults[6]. As with prenatal care, care during perinatal hospitalization should be multidisciplinary, involving social care and breastfeeding and lactation consultation service if available.

Pregnant adolescents living in remote communities should be supported to give birth as close to home as possible[6]. If the adolescent mother needs to be evacuated from a remote community for perinatal care, a family member or other person should be encouraged to accompany the patient[6].

Postpartum care

Postpartum care for the adolescent mother should include breastfeeding support, a discussion or re-discussion of contraceptive care if not previously completed and planning for school return.

Postpartum care of adolescent mothers should include encouraging them to attain their adolescent developmental milestones[6]. The physician can use tools like the Greig Health Record[4] or screen for and promote milestone achievement.

Finally, the adolescent mother and her child will often have many psycho-social needs in addition to the medical aspects of pregnancy and postpartum care and thus, the healthcare worker should have a good knowledge of community-resources and supportive services in the area to direct the adolescent as needed including food banks, housing services, education, legal and job centers, child development and parenting centers, sexual health clinics, public health programs and, where available, resources specific to adolescent parents[4]. This can also be achieved with the help of a multidisciplinary team or a social worker.

Healthcare care of children of adolescent mothers

Adolescent mothers have lower rates of attendance to prenatal classes and have less general preparation and experience regarding the birthing and parenting process. The importance of providing *anticipatory* guidance, with specific assessment and teaching around infant growth and development, nutrition, feeding, sleep, safety and immunizations is critical[4, 9].

Healthcare providers should be aware that children of adolescent mothers are at higher risk of cognitive, speech and language delays. The Canadian Pediatric Society recommends to include an appropriate developmental screen, such as the Nipissing District Developmental Screen, the Ages and Stages Questionnaire (ASQ), and the Ages and Stages Questionnaire: Social-Emotional (ASQ:SE)) along with a targeted speech and language screen at the 18 month visit to monitor for potential vulnerable areas, and allow for early identification and intervention if indicated[4, 13].

Fathers of adolescent pregnancies

Epidemiologically, fathers who co-parent with adolescent mothers are on average 5 years older than their partner and thus, not always adolescents themselves[4]. In terms of living arrangements, studies show that few of these fathers live with their partner and children, (less than 20%), but most report visiting at least once a week[4].

Paternal involvement in the lives of the child and the mother is associated with positive health outcomes and should be encouraged if safe and possible. Studies have demonstrated that early engagement of fathers, from the prenatal period onward, facilitates their involvement and commitment later in life. The CPS therefore recommends actively trying to include father in the continuum of perinatal care whenever possible[4, 6].

Healthcare workers should also remain mindful that domestic violence and relationship problems can put the child-mother dyad at risk of negative health outcomes and are unfortunately more common in the adolescent population. Thus, the physician caring for the pregnant adolescent should screen for psychosocial stressors and provide information and support as necessary[4].

Back to the case:

Now that we have reviewed the management of adolescent pregnancy, let's go back to our case. You offer to do a urine pregnancy test immediately and Emily readily agrees. The result is positive, and you sensitively explain this to her. An ultrasound machine is available at your clinic and you are therefore able to locate an intrauterine pregnancy and date it at approximately 9 weeks 4 days old. You present her with all the possibilities, including parenting, adoption, kinship care and abortion. You explain to her that in Quebec, abortion is legal at any stage of pregnancy but is not routinely performed and can be difficult to access after 23 weeks. You tell her that you understand she is very afraid to tell her family and you reassure her that you will respect her decision to share the news with them or not, but counsel her that most adolescents find it helpful to have the support of a family member and/or their partner when making this important decision. You suggest that she take one or two days to think about it, after which you can meet again to discuss her plans. You encourage her to bring family members and/or her partner to her next appointment.

Emily comes back the following day with her mother and her sister. She explains she would like to continue the pregnancy. You refer her to your multidisciplinary adolescent pregnancy team. Emily meets with the nutritionist, who explains to her the heightened importance of a healthy and nutritive diet during her pregnancy. You also prescribe folic acid and iron supplements. A specialized nurse counsels Emily on prenatal care, including the importance of avoiding smoking, drugs and alcohol. A social worker meets with Emily and obtains permission to contact her school to arrange permission for her absences for medical appointments and support to stay on top of her schoolwork. She also helps her plan how to return to school after the birth of her child.

You suggest that Emily and Ethan both get screened for STIs, and both agree. These tests are negative.

On your recommendation, Ethan comes with Emily to attend prenatal visits and ultrasound appointments. At every prenatal appointment, you take some extra time to chat with Emily regarding her mood, any STI symptoms, any violence at home, and any drug or alcohol use.

During her third trimester, you start discussing postpartum contraceptive options with Emily. She opts for a hormonal IUD.

At 36 weeks 5 days, Emily presents to the hospital because she recognizes signs and symptoms of preterm labor that you had reviewed with her at her last appointment. She gives birth to a healthy baby boy by vaginal delivery with her family and Ethan by her side.

Ten minutes after placental delivery, you insert an IUD as you had planned with Emily prior to birth.

Emily had to quit her job at Tim Hortons and the soccer team to take care of her newborn and continue her education. However, with the help of her social worker and her family, she manages to graduate on time and get accepted to a Nursing Program. On a follow-up appointment, Emily expresses that she finds being an adolescent parent difficult and demanding but also rewarding and fulfilling. She thanks you for your care.

Conclusion and Review:

This brings us to the end of our podcast. Let's review the takeaway points we have learned today.

1. Pregnant adolescents are more likely to delay seeking care, especially because of concerns regarding confidentiality, judgment, and easy access to care. These issues should be addressed in designing an adolescent-welcoming clinic.
2. Given their more complex psycho-social and medical needs compared to their adult counterparts, adolescent mothers benefit from being followed by a multidisciplinary team antenatally, perinatally and postnatally.
3. Adolescent mothers are at higher risk of mood disorders, alcohol and drug abuse, STIs and intimate partner violence. They should be screened routinely and repeatedly for these conditions.
4. Children of adolescent mothers are at higher risk for cognitive, speech and language delays and should be screened more frequently for these conditions.
5. Adolescents parents and their children present to the physician as two pediatric patients, each with age-specific milestones to keep in mind. The dyad's medical needs are not the direct result of maternal age but rather a consequence of the associated social determinants of health[4].
6. Fathers of children born to adolescent mothers tend to be less present in their children's care and life. Their involvement is associated with positive health outcome. If safe and feasible, fathers should be included in prenatal care as much as possible to promote their involvement in the child's life.

As physicians, we can promote our adolescent patients' sexual health by providing accurate information about sexuality and pregnancy, fostering responsible communication and decision-making skills, and offering guidance and support as they navigate their life experiences[12].

This concludes our overview of adolescent pregnancy. We hope you enjoyed this episode and will listen to many more. Thank you for listening!

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