Pre-pregnancy Planning for Type 1 and Type 2 Diabetes

Disclaimer

This pathway is for pre-pregnancy planning for pregestational type 1 and type 2 diabetes. Use in conjunction with the Preconception Assessment pathway. For management of diabetes in pregnancy, see the Diabetes and Pregnancy pathway.

Contents

Red Flags

- Poor glycaemic control
- Renal impairment
- Higher risk of acceleration of retinopathy and potential bleeding

Background – About Pre-pregnancy Planning for Type 1 and Type 2 Diabetes

- Maintain glucose levels as close to target as possible before and throughout pregnancy.
- In the first 8 weeks of pregnancy optimal metabolic control reduces the risk of congenital malformations and miscarriage.
- Preconception counselling and planning have been demonstrated to reduce the risk of ***adverse pregnancy outcomes.***
    - *Miscarriage*
    - *Congenital malformations*
    - *Pre-eclampsia*
    - *Macrosomia*
    - *Higher rates of caesarean section*
    - *Birth injuries*
    - *Stillbirth*
    - *Respiratory distress at birth*
    - *Hypoglycaemia in the neonate*
    - *Jaundice of the neonate.*
    - *Development of or deterioration in maternal retinopathy and nephropathy*

Assessment

1. Ensure:
    - patients of reproductive age with diabetes are aware of the need for pre-pregnancy planning.
    - accurate contraception advice.

2. If possible, refer for specialist diabetes care 3 to 6 months prior to planned conception.

3. Examine eyes, feet, and screen for any renal or other diabetes complications.

4. Arrange investigations:
    - Check glycaemic control (HbA1c). Aim for HbA1c ≤ 7% for type 1 diabetes and ≤ 6% for type 2 diabetes. Facilitate high patient involvement and motivation, as these are challenging targets.
    - Review with the patient self-blood glucose monitoring:
        - Type 1 – up to 6 to 10 times per day.
        - Type 2 – usually 4 to 6 times per day.

5. Perform standard preconception assessment as well, ensuring ***immunisation,*** cervical screening, and dental check are up-to-date.

Assess immunisation needs

- *Assess the need for vaccination before pregnancy, particularly for hepatitis B, measles, mumps, rubella, and varicella.*
- *If previous vaccination or infection history is uncertain, serological testing can be undertaken to test the need for vaccination.*
- *Influenza vaccination is recommended for women planning pregnancy.*
- *Assess those with risk factors for pneumococcal disease, including smokers, for pneumococcal vaccination. See Australian Immunisation Handbook recommendations.*

Management

Key elements of preconception planning for women with diabetes:

1. Start high dose folate supplementation at 5 mg daily and commence at least one month before conception.

2. Optimise glycaemic control during pregnancy to reduce risk of miscarriage, congenital malformations, and perinatal mortality:
   - For patients with:
     - type 1 diabetes, aim for HbA1c ≤ 7% (53 mmol/mol).
     - type 2 diabetes, aim for HbA1c ≤ 6% (42 mmol/mol).
   - Inform patient that any reduction in HbA1c level towards their target is likely to reduce the risk of congenital malformations in the baby.
   - Strongly advise patients to delay conception until glycaemic control is at or close to target to reduce associated pregnancy risks.
   - Advise women with type 1 diabetes they are eligible for PBS subsidised continuous or flash glucose monitoring products.

3. Review lifestyle:
   - Optimise dietary management to maintain good glycaemic control before and during pregnancy. Consider referral for diabetes education.
   - Encourage patients to maintain normal weight or lose weight if necessary to reach target weight before pregnancy. This reduces the risks of diabetes-associated pregnancy complications. Consider referral for dietary and exercise advice.
   - Smoking cessation.

4. Review medication:
   - Stop oral hypoglycaemic agents. Continue ***metformin*** only on specialist advice.

     Metformin
     - *Crosses the placenta.*
     - *Studies suggest that metformin is safe for short-term outcomes.*
     - *There are currently no significant long-term data for effects on infants.*
     - *Can be considered if:*
       - *insulin is not an option, or*
       - *in addition to insulin if high doses are required.*
     - *The Australasian Diabetes in Pregnancy Society (ADIPS) does not currently recommend the use of metformin in pregnancy except under certain circumstances.*

   - If patient has type 2 diabetes, consider starting insulin therapy.

- Change anti-hypertensive medication to an agent considered safe in pregnancy e.g. methyldopa or labetalol.
- Stop statins and fibrates.

5. Complete any ***immunisations.***

Immunisations for women planning pregnancy

- *Give non-pregnant seronegative women MMR immunisation (Priorix or MMRII) at least ≤ 28 days before conception. Check rubella serology 6 to 8 weeks after vaccination. If antibody levels are negative or low, revaccinate.*
- *Give 2 doses of varicella vaccine at least 4 weeks apart in nonimmune women ≤ 28 days before conception.*
    - *It is not recommended to check seroconversion after a documented history of age-appropriate vaccination, as serological testing for varicella does not provide a reliable measure of vaccine-induced immunity.*
    - *Serological testing is useful to indicate whether previous natural infection has occurred in women who have no history of vaccination.*

- *Pneumococcal vaccine is free for all Aboriginal and Torres Strait Islander people 50 years or older, and those aged 15 to 49 years who have conditions associated with an increased risk of invasive pneumococcal disease i.e., diabetes. See Australian Immunisation Handbook recommendations.*
- *Advise women who receive live attenuated viral vaccines against becoming pregnant within 28 days of vaccination. However, adverse effects from this occurrence are extremely unlikely, and there is no indication for termination of the pregnancy.*

Referral

- For further pre-pregnancy counselling and optimisation of management, refer all patients with diabetes for urgent or routine diabetes referral.
- Consider referral for:
    - diabetes education.
    - dietary and exercise advice.

Information

For health professionals

Further information

Australasian Diabetes in Pregnancy Society (ADIPS) – Welcome to ADIPS

For patients

- Diabetes Australia – Pregnancy
- The National Diabetes Services Scheme (NDSS) – Pregnancy and Diabetes

References

1. McElduff A, Cheung NW, McIntyre HD, Lagström JA, Walters BN, Oats JJ, et al. The Australasian Diabetes in Pregnancy Society consensus guidelines for the management of type 1 and type 2 diabetes in relation to pregnancy. Med J Aust. 2005 Oct;183(7):373-7.

Disclaimer

Last updated: September 2020