Medical Management of First Trimester Miscarriage at a Tertiary Hospital: Potential Impact of Routine Ultrasound Assessment

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Introduction

Miscarriage affects up to 25% of women in their lifetime and can have serious complications including massive haemorrhage, serious pelvic infection, and adverse effects on maternal mental health and wellbeing.

Management options for first trimester miscarriage include expectant, medical, or surgical. Surgical management of miscarriage has been widely reported to be the most effective, with a 91-100% rate of achieving complete miscarriage. Efficacy rates of 80-99% have been reported for medical management of miscarriage.

Rates of serious complications have not been shown to differ significantly following medical versus surgical management of miscarriage. Given this, medical management of miscarriage is considered a favourable approach for women who wish to avoid a surgical procedure.

Methods

A retrospective audit of patients presenting to the Early Pregnancy Assessment and Management Service (EPAMS) at a large tertiary hospital was conducted. All women presenting for management of miscarriage up to 12+6 weeks gestation between January 1st, 2020 and December 31st, 2020 were included. Patient characteristics, management regimes, and clinical outcomes were extracted from the electronic health record. A comparison was made between the data and the state wide clinical guideline for early pregnancy loss.

Findings

A total of 467 women presented for management of first trimester miscarriage. Ten percent (n = 45) of these women opted for medical management, as outlined in Figure 1. Women undergoing medical management of miscarriage are followed up by the EPAMS. An initial dose of 800 micrograms of oral misoprostol is administered on day 1, followed by a second dose 24-hours later. Phone follow up by the early pregnancy service is conducted on day 2 to assess for patient symptoms, including the passage of products of conception. Patients are reviewed on day 8 post administration of the initial misoprostol and are referred for a pelvic ultrasound.

Of the 45 women undergoing medical management complete miscarriage was diagnosed in only 17.7% (n = 8) of women after initial medical management. A total of 82.3% (n = 37) required subsequent dilation and curettage for incomplete miscarriage as determined on routine ultrasound (See Figure 2). A routine follow-up ultrasound was performed in 100% of women presenting for follow up after medical management. An intra-uterine sac was visualised in only 6 follow up ultrasound scans. 27 scans reported the presence of heterogenous intra-uterine contents with volumes ranging from 0.9-28mL, and 12 scans reported an increased endometrial thickness (mean endometrial thickness 12.2mm).

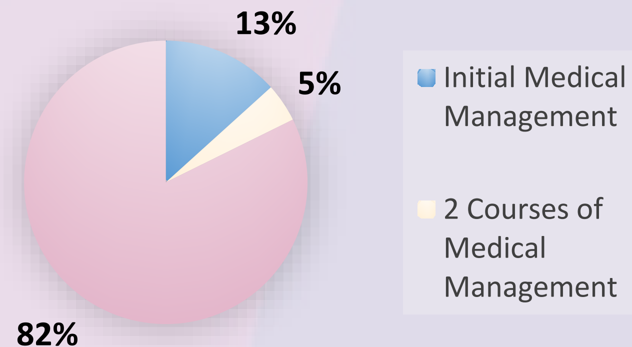

Figure 2. Completion of medical management of miscarriage: A comparison of outcomes

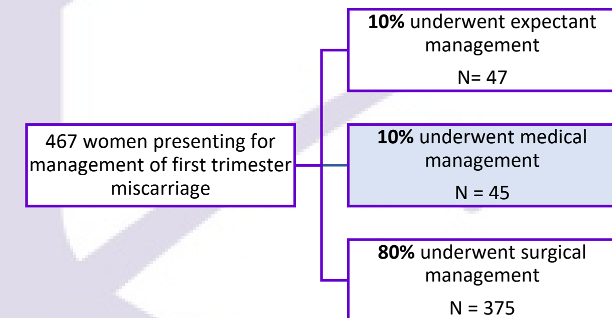

Figure 1. Management of First Trimester Miscarriage

Recommendations

This audit demonstrated a high percentage of failure for patients undergoing medical management of first trimester miscarriage. This is contrary to widely reported outcomes of medical management, highlighting the importance of a completion criteria. This may include the judicious use of ultrasound in the follow up of medical management of miscarriage and strict ultrasound criteria used to define retained products of conception. In response to this audit a local guideline is currently in development.