

Audit of methotrexate use in early pregnancy in an Irish tertiary maternity hospital.

A. Lutfi¹, D. Hayes-Ryan¹, E. Cottrell² and R. Greene^{1,3}

1. Dept. of Obstetrics & Gynaecology, Cork University Maternity Hospital, Cork, Ireland. 2. Dept. of Pharmacy, Cork University Hospital, Cork, Ireland. 3. National Perinatal Epidemiology Centre, Cork, Ireland.

Introduction

Ectopic pregnancy (EP) is a pregnancy that implants outside of the uterine cavity with the majority implanting in a fallopian tube. Methotrexate (MTX), a folic acid antagonist, may be used to medically treat EP. National Guidelines for the diagnosis and management of EP, published by the Royal College of Physicians of Ireland, details patient suitability criteria for MTX. Patients administered MTX for EP have serial surveillance of serum β -human chorionic gonadotropin (β -HCG) until levels return to non-pregnant values. Successful treatment with MTX resolves an EP without the need for surgical intervention.

Objective

Audit the use of MTX in patients with EP in our unit and to compare against national standards.

Methods

- Retrospective audit of all patients who received systemic MTX therapy in early pregnancy at Cork University Maternity Hospital (CUMH) from 1st January 2018 to 31st December 2020 inclusive.
- Pharmacy records of MTX prescription were used to identify eligible patients
- Electronic health care records review was conducted by a single researcher from April to November 2021.
- Relevant clinical data was transcribed and stored on a locked excel spreadsheet in accordance with General Data Protection Regulation.
- Descriptive analysis and comparison to National Standards was conducted using SPSS Version 24 in December 2021.

Table – Compliance with National Guidelines Standards

Standards	Compliance (% , n=51)
Patient Features	
No medical contraindications	100%
Haemodynamically stable	100%
Compliant with medical follow up	98%
Ultrasound Features	
Size of adnexal mass < 35mm	98%
No foetal cardiac activity	94%
No evidence of intra-abdominal bleeding	66%
Blood Work	
Pre-methotrexate serum β -HCG < 5000 U/L	96%
Full blood count checked	100%
Liver function test and renal profile checked	94%
Service Features	
Senior clinician decision	100%
Contraceptive advice documented	53%

Results

A total of 51 patients received MTX as medical management of a confirmed EP. All patients with EP who received methotrexate were haemodynamically stable without medical contraindications to treatment. Almost all cases had an adnexal mass < 35mm (98%), without evidence of foetal cardiac activity (94%). All had full blood count performed prior to treatment with 94% having baseline liver and renal function profiles performed. Serum β -human chorionic gonadotropin (β -hCG) levels prior to treatment were < 5,000 IU/L in 96% of cases with 66% having no evidence of intra-abdominal bleeding on ultrasound. Repeat dose of MTX was required in 14% of cases and emergency surgery subsequently performed in 8% of cases. Follow up continued until serum β -hCG returned to non-pregnant levels with only 2% of cases failed to attend follow up.

Conclusions

MTX is a useful option for medical management of EP in suitable candidates. The need for repeat dose MTX and subsequent emergency surgery in our audit is in keeping with national standards. Improvements can be made on patient selection based on β -hCG levels and ultrasound features. A re-audit is planned following local dissemination of findings and education provision.

References

Clinical Practice Guideline: The diagnosis and management of ectopic pregnancy. Royal College of Physicians in Ireland, 2014. <https://rcpi-live-cdn.s3.amazonaws.com/wp-content/uploads/2021/12/ectopic-pregnancy>

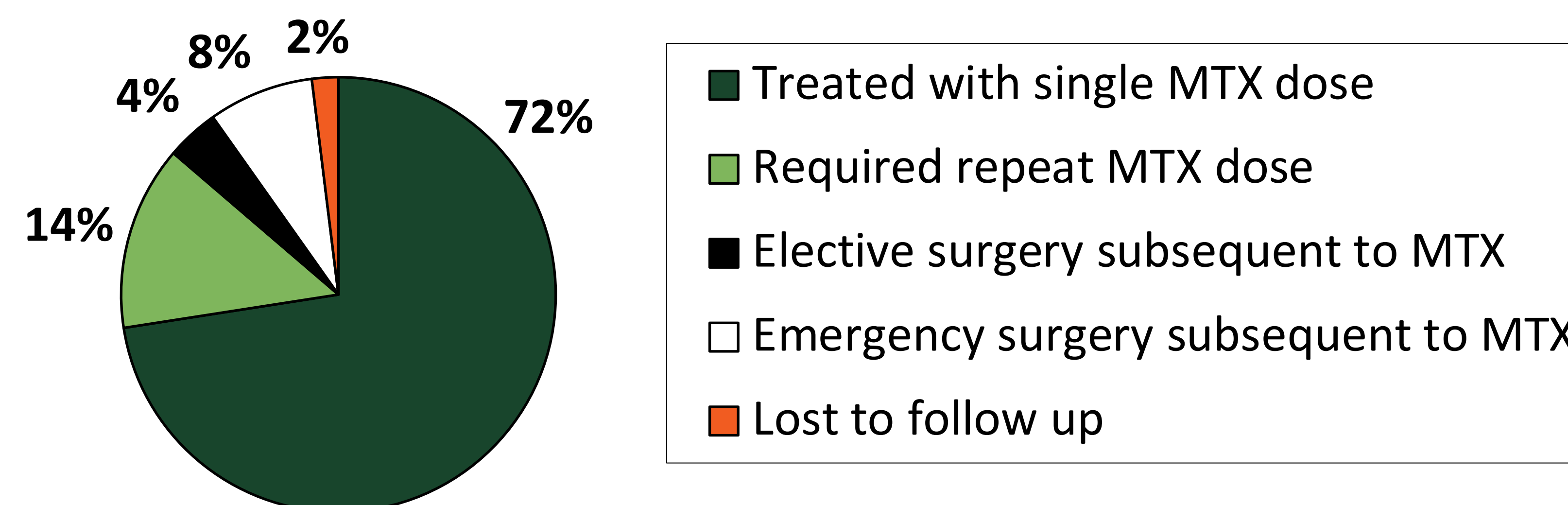


Figure – Outcomes following MTX administration in patients with EP (n=51).