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Evaluation of the Use of Intramuscular Clozapine

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Background
Use of clozapine via the intramuscular route (IM) has recently started at the Hospital.
It was felt important to review current use alongside the literature and guidance from elsewhere to inform content in the trust clozapine guideline and facilitate safe and effective use of this treatment strategy. There is little information regarding IM clozapine in the literature 1,2. Some services have guidelines 3,4.

Objectives
The aim of this service evaluation was to examine when IM clozapine has been used at the Hospital and review these instances using the following objectives:
- Patient characteristics
- Purpose of the use of IM clozapine
- Practical considerations
- Use and outcomes

Method
A retrospective evaluation of the existing clinical and medication records for each case where a Hospital patient had had clozapine IM prescribed occurred, and was assessed in accordance with the stated objectives. As this review was retrospective and did not influence patient care then no ethics committee approval was required.

Results
The following results were elucidated:
- All patients (n=7) were adults (age range 25 – 46 years old); four males and three females. There was a mixture of diagnoses; treatment-resistant schizophrenia predominated although treatment-resistant bipolar disorder, schizoaffective disorder and emotionally-unstable personality disorder also featured as concomitant or stand-alone diagnoses for three patients.
- Patients had generally had and responded to clozapine previously at doses of up to 400mg/day however two patients were clozapine-naïve.
- Four patients were prescribed IM clozapine to initiate it; the remainder were already prescribed it but were intermittently adherent.
- One patient had been unwell for four years; the others had been unwell for at least 12 years.
- Pre-clozapine medications for those not already prescribed it were all long-acting injectable antipsychotics, due to adherence (one each of fluphenazine, zuclopenthixol, olanzapine and paliperidone).
- All patients were successfully transferred to or maintained on clozapine as a result of use of the IM formulation being approved for them.
- Three patients had IM clozapine administered in the first two weeks of it being prescribed for them; all of these were patients being initiated onto clozapine, and for two of them, their initial clozapine dose was via the IM route. Dose titrations were generally once daily. Between one and four IM doses were used.
- One patient needed to be restrained for full blood count sampling on at least one occasion in the first two weeks of treatment with IM clozapine. Two patients needed to be restrained for administration of IM clozapine in the same period.
- No patients ceased clozapine due to efficacy or tolerability issues. Two patients moved into less acute settings, and all patients have improved at least somewhat. IM clozapine remains prescribed for most patients (n = 5) as a “back up” should adherence become an issue.
- All patients had clozapine administered under the auspices of a T3 or Section 62.

Discussion
- The initial clozapine IM patient’s clinical team found the process challenging as they had not undertaken it before, and needed significant input and guidance from pharmacy. Subsequent teams used the initial paperwork as a starting point and found the process easier.
- Lead-in times for supply to pharmacy caused issues initially until the correct baseline stockholding was achieved.
- Ward staff initially lacked confidence with clozapine IM due to unfamiliarity with it (including dose equivalences to oral clozapine) and needed significant input from pharmacy however this improved over time. Feedback indicated it was easy to draw up and administer, especially compared to long-acting injectable antipsychotics.
- Dose volumes needed to be carefully considered. On occasion a lower IM dose of clozapine was deliberately used to avoid needing two injections to be administered.
- Ward staff were happier with the concept of IM clozapine than they were administering clozapine nasogastrically, as happens elsewhere.
- Sometimes, second opinion doctors did not accurately document the IM clozapine or limited the number of clozapine IM doses that could be used to an impractically small number on content-to-treatment paperwork, necessitating the use of Section 62 paperwork by the clinical team.
- The only medication error involving clozapine IM so far is where a ward medic changed the dose of oral clozapine but did not make a commensurate change to the IM clozapine dose. This was rectified by pharmacy staff prior to administration.
- At the time of writing there are four more patients in the process of being approved for use of IM clozapine.

Conclusion
Use of IM clozapine can be a safe and effective intervention for a small group of patients who will not adhere with oral treatment. Practical considerations have been identified that will be used to inform trust guidance. Use of IM clozapine may facilitate earlier access to it for those fitting the criteria for it to be used.

Future Directions
- The logistical issues encountered with pharmacy will be looked at as part of generation of the Trust’s overarching clozapine best practice guideline so that other Trust services can benefit from the experience within Rampton Hospital.

References: