Service evaluation of Morphine versus Fentanyl Patient Controlled Analgesia.

Background.

The default drug for patient controlled analgesia (PCA) was morphine (1mg/ml). During routine patient review postoperatively, it was noted that increasingly changes from morphine to fentanyl (10 micrograms (mcg)/ml) PCA was required, due to growing populations of elderly or renal impairment patients who were suffering from negative side effects. Change of the default PCA to fentanyl was considered but little published evidence could be found comparing the advantages and disadvantages of the two drugs in the general population.

Aims and Objectives.

Explore any advantages of one drug over the other. Confirm optimum dose for use in fentanyl PCA.

Method.

Retrospective review of data from pain charts of 60 morphine (1mg bolus/5-minute lock out) PCA was undertaken. Following this the default PCA was changed to fentanyl (10 mcg bolus / 6-minute lock out). The change was cascaded to all relevant staff. If it was clinically indicated Morphine PCA could still be prescribed. Ongoing review was carried out; a plan was in place to adjust the bolus dose where was necessary. Systems were in place for staff to call for help if they felt that a patient’s pain was not controlled. Data collected included patient demographics; pain scores; changes to bolus dose or drug; side effects; duration of use; total dose used; number of syringe refills.

During routine review 8 of the first 25 fentanyl PCAs required an increase to 20mcg bolus dose; so, for the remainder of the evaluation the default dose was set to 20mcg. Following the evaluation period morphine PCA was reinstated as the default pending analysis of results.

Results.

Data from 51 morphine and 47 fentanyl PCAs was analysed. Groups were comparable in terms of age and additional techniques e.g. spinals, nerve blocks etc. Surgical specialties varied but colorectal was most common in both groups. Median duration for Morphine PCA was 25 to 48 hours; Fentanyl was 49 to 72 hours. Rates of nausea and vomiting were similar. The data from pain scores was huge. In the analysis worst pain scores were recorded for both drugs, even if scores were reported on a single occasion. There was minimal difference in pain scores between morphine and fentanyl 20mcg bolus. More syringe refills were required for Fentanyl PCA than for morphine PCA.

 Conclusions.

There was minimal difference to pain relief or side effects where a 20mcg bolus dose of fentanyl was used. It is acknowledged that this was a small sample size; differences may be observed if a larger evaluation was undertaken. Guidelines have been updated to present both drugs as equal options. The concentration in the fentanyl syringe has been changed from 10mcg/ml to 20mcg/ml to decrease work load for nurses on the ward and limit the risks posed by an increased number of syringe changes. Anaesthetists have been encouraged to select the most appropriate drug for the patient’s surgery and comorbidities. Staff are more familiar with the fentanyl PCA and prescribing it more often where appropriate.