

# Metoclopramide Induced Extrapyramidal Reactions. Two Case Reports

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## ABSTRACT

**Introduction:** Metoclopramide has been used as an anesthetic adjunct due to its prokinetic and antiemetic effects. Extrapyramidal side effects associated with it are not dose related. There have been infrequent reportings of EPS time and again but as such incidence is quite low in practice.

**Case report:** Two cases of extrapyramidal side effect development after a single injection metoclopramide in post-anesthesia care unit and in operation theatre. In both of the above cases a diagnosis of metoclopramide induced extrapyramidal reactions was made due to a characteristic presentation of muscular rigidity, oculogyric crisis, infrequent limb movements.

**Conclusion:** Metoclopramide induces acute or chronic neurological side effects and its usage in general population should be restricted to some specific condition. The need of the hour is another alternative to metoclopramide and a thorough drug history of drug intake.

**Keywords:** Metoclopramide, Extrapyramidal Reactions

## INTRODUCTION

Metoclopramide has long been used for prevention of PONV due to its prokinetic and antiemetic effects. A dose of 10 mg has been found to have no adverse effects, such as, extrapyramidal symptoms. There have been infrequent reportings of EPS time and again but as such incidence is quite low in practice.<sup>2</sup>

We are reporting two cases of extrapyramidal side effect development after a single injection metoclopramide (10 mg) in post-anesthesia care unit and in operation theatre, in patients previously administered ondansetron.

One is a 32 year female presented for undiagnosed primary infertility in a private setting. Another is of 26 year female came for emergency caesarian section in SGT university, gurgaon.

## CASE 1

A 32 years female presented in the obstetrics and gynaecology dept of SGT University for undiagnosed primary infertility. After complete workup she was planned to be taken up for laparoscopic diagnosis of primary infertility. She had normal vitals and was afebrile (BP 116/74, PR 89/min). She had a normal built and weight was 67 kg with ht 5 feet 4 inch. She was kept NPO for 8 hrs and tab rantac (50 mg) and tab anxit (0.25 mg) given in the morning with a sip of water. Patient brought to the operation theatre and all monitors (NIBP, ECG, pulse oximeter) attached. She was given inj. glycopyrrolate 0.2 mg, inj. fentanyl 100 mg. Induction was done with inj propofol 130 mg and isoflurane. After loss of spontaneous respiration inj vecuron 4 mg given as we did not suspect a difficult intubation. After 3 minutes of PPV intubation with ETT no 7.5 done. Confirmation of tracheal intubation done and patient put on mechanical ventilation. Intraoperatively vitals monitored and maintained. After completion of surgery which lasted for one

hour patient given inj ondansetron 4 mg before extubation. She was given 100% O<sub>2</sub> for five minutes and then shifted to recovery room. Vitals were stable and SPO<sub>2</sub> 100%.

After 20 minutes she complained of nausea and inj metoclopramide 10 mg was given by nursing staff present in the RR. After about 5 minutes of giving the drug, patient became restless and had hyperextended opisthonous posture of the extremities bilaterally. Her head was tilted laterally and backwards and had a fixed upward gaze, but the vitals were stable and she was fully conscious and responding to all questions. Her tongue was repeatedly protruding out. Pupils were normally reacting to light and had no visual problem. Fundoscopic examination was normal. She was immediately given inj midazolam 2 mg and the typical signs and symptoms resolved after about 7 minutes. Midazolam is easily available in OTs and hence was drug of choice for us.

## CASE 2

A 26 year female patients presented in the obstetrics and gynaecology dept of SGT university, Gurgaon, with active labour pain. She was G1P1 and had a history of previous abdominal surgery. Ultrasonography confirmed a breech presentation and hence immediate caesarian section was planned. She had a normal built and had weight of 76 kg, height 5 feet 1 inch. Vitals were stable (BP 128/74, PR 95/min). Following normal protocols, she was given inj ranitidine 50 mg and inj perinorm (metoclopramide) 10 mg I/V and shifted to the operation theatre after 5 minutes. All monitors (NIBP, pulse oximeter) attached. She was positioned in a left lateral position for spinal anaesthesia. Just when about to give anaesthesia, she complained of rigidity in her arms and legs, and had backward tilt of her head. Immediately she was made supine and oxygenation started, but the vitals were all stable. She was fully conscious and responding to commands. She had a bilaterally fixed upward gaze of pupils, which were reacting normally to light. She was in active labour, we could not wait much so immediately inj midazolam 2 mg given. Fetal heart rate monitoring was done. Luckily her symptoms resolved after 5 minutes and we planned for general anaesthesia. Inj propofol 100 mg along with halothane started and after loss of eyelash reflex inj scoline 100 mg given. Endotracheal intubation with ETT no. 7 done. Section performed and a normal, active

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baby was delivered within 7 minutes. Patient extubated after completion of surgery and observed in the recovery room for one hour. No further opisthotonus or oculogyric crisis occurred. Laboratory findings including CBC, LFTs, RFTs, and CSF sample sent for microscopy to rule out acute meningitis, were normal. She was shifted to the ward after 1 hour. She was discharged after 3 days and came for follow up after 7 days. No history of rigidity or spasm was there.

In both of the above cases a diagnosis of metoclopramide induced extrapyramidal reactions was made (muscular rigidity, oculogyric crisis, infrequent limb movements) and patients were warned for any such future medication or drug allergy.

## DISCUSSION

Here, we present two cases of female patients who experienced an extrapyramidal side effect following a single administration of metoclopramide for PONV. Only very few cases of metoclopramide induced extrapyramidal reactions have been reported in literature.<sup>2,3</sup>

Metoclopramide effect on the dopamine receptors in CTZ is responsible for its antiemetic nature. Extrapyramidal reactions are the most common in the aged and young patients. Even though the mechanism underlying extrapyramidal reactions is largely unclear.<sup>4,5</sup> Extrapyramidal symptoms are usually encountered within the first 24-72 hour of administration. However, our patient experienced an extrapyramidal side effect only a few minutes after metoclopramide was injected. This is consistent with a previous report of extrapyramidal symptom development within 10-15 minutes of IV metoclopramide administered.<sup>6</sup>

Acute extrapyramidal symptoms tend to resolve rapidly after the cessation of the causative drugs. Benztropine is effective for most dystonic reactions within a few minutes. Many more such drugs have been reported and studied. But the availability, convenience and safety of midazolam, in our OTs, this was our drug of choice. Antihistamine, propranolol, thiopentone, clonidine or even dexmedetomidine, or amantadine (acting on D2 receptors) may also be used and have been studied.<sup>7,8</sup>

Many drugs are reported in literature to cause dystonic acute extrapyramidal metoclopramide type reactions such as phenothiazines, butyrophenons, alpha-methyl dopa, reserpine, lithium, phencyclidine, ketamine, phenytoin, and many antihistamines. So metoclopramide induced acute dystonic reactions may be difficult to diagnose or may be confused with encephalitis, hypocalcemia, hypoglycemia or seizure.<sup>9</sup> This may further lead to loss of time in misdiagnosed situation and may sometimes prove fatal for the patient, leading to physician anxiety. Our cases were both diagnosed as metoclopramide induced EPS with clear history of drug injection in the near past. Also the patients were conscious cooperative with improper repetitive limb movement further pointing toward metoclopramide induced EPS.<sup>10</sup> resolution of symptoms after a short period of time added to the diagnosis.

## CONCLUSION

Metoclopramide induces acute or chronic neurological side effects and its usage in general population should be restricted to some specific condition. In some cases the thorough drug history, relief after sometime with a focus on Metoclopramide

usage helps in diagnosis.

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