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Intranasal Metoclopramide

A Viewpoint by Sergio Gregoretti

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In the presence of vomiting, which makes the oral route unsuitable, intranasal administration of an antiemetic drug is an attractive concept that has obvious advantages over intravenous or intramuscular administration. Metoclopramide is the first antiemetic to be made available as a nasal spray.

How does the absorption of metoclopramide administered intranasally compare with its absorption after oral or intramuscular administration? From the limited data available, the intranasal route does not provide more rapid absorption or greater bioavailability than the oral route. The intranasal route provides a bioavailability which is about 50% of the intramuscular route,[1] suggesting that intranasal doses twice as large as intramuscular ones are needed to achieve the same blood levels. It seems, therefore, that intranasal administration of metoclopramide may well substitute for oral and, with appropriate dose adjustments, intramuscular administration.

The data suggest that intranasal metoclopramide, because of its slow absorption, may be poorly suited to treating nausea and vomiting when they occur, and rather should be used for timed administrations to prevent emetic symptoms. Clearly, the intranasal route cannot replace the intravenous route when a prompt effect is desired.

Patients who have received chemotherapy or undergone surgery often require treatment for nausea and vomiting and may benefit most from an intranasally administered antiemetic drug. Unfortunately, the results of the few trials so far reported on the effects of intranasal metoclopramide in these patients are disappointing. After intravenous metoclopramide 2 mg/kg, cumulative doses of intranasal metoclopramide of up to 640mg (8 × 80mg doses) were only marginally better than placebo in controlling emesis during the first 24 hours after chemotherapy. The limited data available on the effects of intranasal metoclopramide on delayed chemotherapy-induced emesis are equally unimpressive.

In patients who have undergone surgery, intranasal metoclopramide 20mg was found to be no different from placebo in preventing post operative nausea and vomiting.[2] These results are perplexing, since others have found that metoclopramide 10mg intravenously (supposedly a dose equipotent to 20mg intranasally) was able to decrease postoperative nausea and vomiting by 50% in comparison with placebo.[3, 4]

More information is obviously needed on the absorption of intranasal metoclopramide, especially when administered at the high doses (60 to 80mg) that were used in some clinical trials and found to be surprisingly ineffective. Further clinical studies, combined with more complete pharmacokinetic data, will determine the place of intranasal metoclopramide in our therapeutic armamentarium. ▲

References

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