*wjpmr, 2023, 9(5), 245-171*

**SJIF Impact Factor: 5.922**

**WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH**

www.wjpmr.com

**Research Article**

**ISSN 2455-3301**

**WJPMR**

# LEVOSULPIRIDE'S FUNCTION IN THE TREATMENT OF FUNCTIONAL DYSPEPSIA

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**Article Received on 21/03/2023** **Article Revised on 11/04/2023** **Article Accepted on 01/05/2023**

## ABSTRACT

**Background:** Functional dyspepsia (FD) is a condition characterized by a variety of gastrointestinal symptoms, such as abdominal pain, bloating, nausea, and early satiety, without any clear structural or biochemical cause. There are several treatment options available for managing dyspeptic symptoms, including replacing NSAIDs with COX-2 inhibitors, proton pump inhibitors, and treatment of H. pylori infection. Refractory cases can be treated with antidepressant or prokinetic drugs. **Methods:** The study evaluated the efficacy of levosulpiride in managing dyspeptic symptoms and found it to be as effective as cisapride but with better tolerability and milder adverse effects. Levosulpiride also improved gastric and gallbladder emptying, gastrokinetic activity, and glycemic control in diabetic gastroparesis. **Result:** Levosulpiride was found to be an effective treatment for dyspeptic symptoms, improving symptoms and quickening gastric and gallbladder emptying, with mild adverse effects, and without serious cardiovascular adverse effects. **Conclusion:** Levosulpiride is an effective and safe treatment option for managing dyspeptic symptoms, improving gastric and gallbladder emptying, gastrokinetic activity, and glycemic control in diabetic gastroparesis. It has better tolerability and fewer adverse effects than other agents, with common adverse effects like galactorrhea, somnolence, fatigue, and headache improving gradually without discontinuation of treatment.

**KEYWORDS:** Levosulpiride; Dyspepsia; Gastroparesis.

## INTRODUCTION

Instead of a specific diagnosis, dyspepsia refers to a set of symptoms related to the upper gastrointestinal tract. It comprises of a diverse array of upper gastrointestinal symptoms, such as nausea, vomiting, heartburn, acid regurgitation, abdominal pain or discomfort, postprandial fullness, abdominal bloating, and early satiety. Functional dyspepsia (FD) is a condition that affects a subset of people who do not have a clear structural or biochemical explanation for their symptoms. Functional dyspepsia has been linked to a number of pathophysiological causes, such as altered visceral sensation, central nervous system-enteral nervous system (CNS-ENS) integration dysfunctions, and psychosocial issues. It is a biopsychosocial condition, with disruption of the brain-gut axis serving as the disease's primary genesis.[1,2]

The most typical gastrointestinal symptom requiring medical attention is dyspepsia.[3] Population-based research on real functional dyspepsia (FD) are rare because it is logistically challenging to rule out structural disease in large patient populations. In numerous population-based studies conducted in Iran, the US, and the UK, the prevalence of dyspepsia ranged from 21% to 29%.[4,5] Uninvestigated dyspepsia (UD) can occur in anywhere between 7% and 45% of people. This substantial range is likely the result of varied definitions of dyspepsia and the various populations that were studied.[2,5]

A population-based study conducted in Iran discovered that while foods like fruits, vegetables, dates, honey, walnuts, yoghurt, bread, and caraway seeds can help prevent dyspepsia, people who use NSAIDs, smoke water pipes, have psychological distress, recurrent headache, anxiety, nightmares, a history of gastrointestinal disease, or are from low socioeconomic status are more likely to experience it themselves.[4,6] Dyspepsia is a common symptom among patients who visit a primary care clinic.[3,7] and this number may exceed 50% in a gastrointestinal clinic.[9] According to two distinct studies conducted in Malaysia.[2,9,10] people with dyspepsia had statistically significantly lower

health-related quality of life than healthy controls. Patients with dyspepsia have considerable impairment in all EQ-5D categories, including mobility, self-care, typical activities, pain/discomfort, anxiety/depression, and mobility.[2,9,10]

## METHODS

Functional dyspepsia and emesis have been successfully treated with the drug levosulpiride. It has been tested in a number of double-blind, random clinical trials, including 15 trials with dyspepsia patients and 11 trials with emesis patients. Levosulpiride has been demonstrated to shorten gastric emptying periods, increase lower esophageal sphincter pressure, speed up gastric emptying, and improve gallbladder emptying. According to the information at hand, cisapride and levosulpiride are both at least as effective in treating functional dyspepsia and dysmotility-like functional dyspepsia, respectively. Levosulpiride is often well tolerated, with side effects that appear within the first 15 days of treatment and subsequently subside without the need to stop the medication.

## RESULTS

**Table 1: Distribution of levosulpiride of study subjects.**

| Levosulpiride given | Frequency | Percentage |
|---|---|---|
| Day 1 | 0 | 0.00% |
| Day 2 | 1 | 1.75% |
| Day 3 | 2 | 3.51% |
| Day 4 | 3 | 5.26% |
| Day 5 | 3 | 5.36% |
| Day 6 | 2 | 7.69% |
| Day 7 | 1 | 9.09% |
| Day 8 | 0 | 0.00% |
| Day 9 | 0 | 0.00% |
| Day 10 | 0 | 0.00% |

**Table 2: Descriptive statistics of percentage fall in gastric reserve volume (mL) after Levosulpiride in study subjects.**

| Variable | Mean ± SD | Median (25th-75th percentile) | Range |
|---|---|---|---|
| Percentage fall in gastric reserve volume(mL) after Levosulpiride | 87.09 ± 4.55 | 87.55 (84.968-89.667) | 81.25-92 |

On day 1, none of the patients had a need for levosulpiride for stomach intolerance. Throughout the trial period, levosulpiride was administered to 4 individuals. These individuals were excluded from additional GRV assessments after using the medicine for two days because the drug could change the patients' mean GRV findings. Levosulpiride was administered to one patient on days 2 and 7, two patients on days 3 and 6, and three patients on days 4 and 5.

## DISCUSSION

### Benefits and limitations of levosulpiride

In 840 dyspepsia patients who participated in a review to evaluate the clinical pharmacology, therapeutic effectiveness, and tolerability of levosulpiride, adverse event incidence was 11%. Only eight occurrences (0.9%) of adverse events led to treatment discontinuation, and the majority of these were minor.[12] Another prospective, multicenter, open-label observational research with 342 participants and three follow-up visits found 40 adverse events. Adverse reactions such diarrhoea, sleepiness, exhaustion, and headache were frequent. Additionally, no patient dropped out of the research due to a negative outcome.[11] In the first fifteen days of treatment with levosulpiride, more than two thirds of side effects occurred, and the intensity of adverse events was higher at the initial visit; few adverse events remained at follow-up.

Levosulpiride therapy has been linked to a small number of side effects, such as levosulpiride-induced rabbit syndrome,[13] resting orolingual tremors,[14] and neck and tongue tremors.[15] Levosulpiride and lemotrigine combination therapy has been used in cases of tardive dyskinesia,[16] and citalopram and levosulpiride therapy has been used in cases of extreme QT interval prolongation (650 milliseconds) with recurrent episodes of suspected polymorphic ventricular tachycardia.[17]

## CONCLUSION

The most typical symptom that prompts a visit to the doctor is dyspepsia. More than 50% of patients in gastrointestinal clinics and between 2 and 4% of patients in primary care clinics present with dyspepsia. Levosulpiride can help control functional dyspepsia, diabetic gastroparesis, and irritable bowel syndrome by inhibiting the presynaptic D2 dopaminergic receptor in the dopamidergic pathway. Levosulpiride was found to be more efficient than prokinetic pharmaceuticals like metaclopramide and domparidone as well as antisecretory medications like ranitidine and cimetidine. It manages dyspeptic symptoms as effectively as

cisapride and has no harmful cardiovascular side effects. Levosulpiride was thus proven to be effective in treating dyspeptic symptoms while having well-tolerated side effects.

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