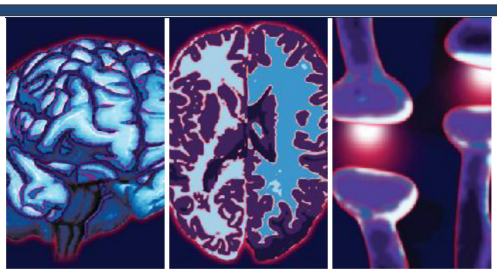
Research Article



# A Comparative Pharmacokinetic Evaluation of Paliperidone Palmitate Extended-Release Injectable Suspensions: An Open Label, Randomized, Twotreatment, Two-Period, Two-Sequence, Multiple Dose, Steady State Crossover Bioequivalence Study in Patients with Schizophrenia and/or Schizoaffective Disorder

Arthik Shetty[1†], Shruti Dharmadhikari[1], Chintan Khandhedia[1], Amey Mane[1], Prashant Devkare[1], Amaresh Chakra[2], Chirayu Shah[2]

**Received date:** 23-Sep-2024, Manuscript No. NPY-24-148606; **Editor assigned:** 25-Sep-2024, PreQC No. NPY-24-148606 (PQ); **Reviewed date:** 09-Oct-2024, QC No. NPY-24-148606; **Revised date:** 16-Oct-2024, Manuscript No. NPY-24-148606 (R); **Published date:** 23-Oct-2024, DOI: 10.37532/1758-2008.2024.14(4).728

## Supplementary Information 1: Inclusion or Exclusion Criteria

### ▪ Inclusion Criteria

1. Willingness to provide voluntary informed consent and adhere to protocol requirements.
2. Male or female patients aged 18 to 65, with negative serum pregnancy test, BMI ≥ 18.00 and weighing at least 50 kg (males) or 48 kg (females).
3. Diagnosis of schizophrenia and or schizoaffective disorder per DSM-V criteria.
4. Clinical stability without hospitalization for psychiatric symptom exacerbation for at least 3 months pre-screening and until randomization.
5. Receipt of Paliperidone long-acting injection (156mg/mL) with at least two prior maintenance doses.
6. Acceptable hematology parameters
   a) Hemoglobin ≥ 9.0 g/dl
   b) ANC ≥ 1500 cells/µL
   c) Platelet count ≥ 100,000 cells/µl
7. Acceptable liver function
   a) ALT ≤ 2.0 X ULN
   b) AST ≤ 2.0 X ULN
   c) Total bilirubin <1.2 mg/dl
   d) Alkaline phosphatase ≤ 2.0 X ULN
8. Creatinine clearance ≥ 80 ml/minute (Cockcroft-Gault Equation).
9. Females of childbearing potential using adequate contraception;
   a) Intrauterine device (placed ≥ 6 months prior)
   b) Two barrier methods (used simultaneously)
   c) Absolute sexual abstinence, surgical sterility, or post-menopausal status ≥ 1 year.

[1]Department of Medical Affairs and Clinical Research, Sun Pharma Laboratories Limited, Mumbai, Maharashtra, India
[2]Department of Medical Affairs and Clinical Research, Sun Pharmaceuticals Industries Limited, Vadodara, Gujarat, India
[†]**Author for Correspondence:** Arthik Shetty, Department of Medical Affairs and Clinical Research, Sun Pharma Laboratories Limited, Mumbai, Maharashtra, India
email: Arthik.Shetty@sunpharma.com

10. Male patients using appropriate contraception to avoid impregnation:

a) Absolute sexual abstinence or barrier method with spermicide.

11. No history of recreational drug or drug or alcohol dependence.

## Exclusion criteria

- Patients exhibiting known hypersensitivity to paliperidone palmitate, risperidone, or any of the components of the investigational product, or to drugs of a similar class.
- Patients demonstrating current suicidal ideation or violent tendencies, as determined by the investigator during screening.
- Patients with a history or current presence of Neuroleptic Malignant Syndrome (NMS), tardive dyskinesia, dementia-related psychosis, Parkinson's disease, epilepsy or seizures or cognitive and motor impairments.
- Patients with a history of arrhythmia.
- Patients testing positive for drugs of abuse in urine screenings, excluding benzodiazepines with a valid prescription.
- Patients testing positive for alcohol on breath tests.
- Patients with a history or current indication of severe, progressive or uncontrolled pulmonary, cardiac, gastrointestinal, hepatic, renal, genitourinary, hematological, endocrine, immunologic, metabolic or neurological disorders.
- Patients with a corrected QT interval (QTcB) exceeding 450 msec (male) or 470 msec (female) at screening, or with a known history of Torsades de Pointes or sudden unexplained cardiac death in a family member.
- Patients with a history of cardiac diseases predisposing to QT prolongation, or currently taking medications known to prolong QT intervals.
- Patients experiencing significant orthostatic hypotension or a history of syncope during screening.
- Patients anticipating or currently using prohibited medications during the study.
- Patients presenting with skin abnormalities or irritations at potential injection sites.
- Smokers consuming 10 or more cigarettes or equivalent daily.
- Patients displaying clinically significant abnormal laboratory parameters or organ abnormalities during screening.
- Patients with medical conditions or serious inter-current illnesses that may hinder study participation or adherence to study requirements, as determined by the investigator.
- Lactating women.
- Patients with current non-healing wounds or major surgical procedures within 28 days prior to the first dose of investigational product.
- Patients testing positive for Hepatitis B Virus (HBV), Hepatitis C Virus (HCV) or Human Immunodeficiency Virus (HIV) serology.
- Patients who participated in any clinical study within 90 days preceding the first dose of investigational product.
- Patients experiencing a loss of ≥ 350 mL of blood within 90 days prior to the first dose of investigational product.
- Patients suspected of or confirmed to have novel coronavirus infection (COVID-19), or with a history of travel/contact with COVID-19-positive individuals/isolation/quarantine.

## ▪ Supplementary Information 2: Details of blood collection time-points during screening period 01 and 02

Supplementary Table 1: Details of blood collection time-points during period 01

| Sample No. | Period 01<br>Day | Blood Collection Time points | Window period |
|---|---|---|---|
| 1 | 57 | Pre-dose blood sample | Within 5 minutes prior to dosing |
| 2 | 85 | Pre-dose blood sample | |
| 3 | 113 | Pre-dose blood sample (00.00) hours | |
| 4 | 114 | 24.00 hours | ± 60 minutes |
| 5 | 115 | 48.00 hours | |
| 6 | 116 | 72.00 hours | |
| 7 | 117 | 96.00 hours | |
| 8 | 118 | 120.00 hours | |
| 9 | 119 | 144.00 hours | |
| 10 | 120 | 168.00 hours | |
| 11 | 121 | 192.00 hours | |
| 12 | 122 | 216.00 hours | |
| 13 | 123 | 240.00 hours | |
| 14 | 124 | 264.00 hours | |
| 15 | 125 | 288.00 hours | |
| 16 | 126 | 312.00 hours | |
| 17 | 128 | 360.00 hours | |
| 18 | 130 | 408.00 hours | |
| 19 | 134 | 504.00 hours | |
| 20 | 141* | 672.00 hours | |

***Note:** Blood sample on day 141 was collected before the first dosing of Period 02 on day 141.

| Supplementary Table 2: Details of blood collection time-points during period 02 | | | |
|---|---|---|---|
| **Sample No.** | **Period 02** | **Blood Collection Time points** | **Window period** |
| | **Day** | | |
| 1 | 197 | Pre-dose blood sample | Within 5 minutes prior to dosing |
| 2 | 225 | Pre-dose blood sample | |
| 3 | 253 | Pre-dose blood sample (00.00) hours | |
| 4 | 254 | 24.00 hours | ± 60 minutes |
| 5 | 255 | 48.00 hours | |
| 6 | 256 | 72.00 hours | |
| 7 | 257 | 96.00 hours | |
| 8 | 258 | 120.00 hours | |
| 9 | 259 | 144.00 hours | |
| 10 | 260 | 168.00 hours | |
| 11 | 261 | 192.00 hours | |
| 12 | 262 | 216.00 hours | |
| 13 | 263 | 240.00 hours | |
| 14 | 264 | 264.00 hours | |
| 15 | 265 | 288.00 hours | |
| 16 | 266 | 312.00 hours | |
| 17 | 268 | 360.00 hours | |
| 18 | 270 | 408.00 hours | |
| 19 | 274 | 504.00 hours | |
| 20 | 281 | 672.00 hours | |