**Imaging and Biomarker Report**

**Study Title:**  
A Phase 2, Randomized, Double-Blind, Placebo-Controlled, Multi-Center Study to Evaluate the Safety and Efficacy of Novostatin (Novitor) in Patients with Hypercholesterolemia

**Protocol Number:** NSP-002-2024  
**Study Duration:** March 2, 2024 – September 22, 2024  
**Sponsor:** Novitor Pharmaceuticals Inc.  
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**1. Introduction**

This report provides a detailed summary of the imaging and biomarker analyses conducted in the Phase 2 trial of Novostatin (Novitor). The primary imaging assessment was performed using carotid ultrasound to measure carotid intima-media thickness (CIMT), an established marker of atherosclerotic burden. In addition, biomarker analyses were conducted to evaluate changes in inflammatory and cardiovascular risk markers, including high-sensitivity C-reactive protein (hs-CRP) and interleukin-6 (IL-6). The combined imaging and biomarker data are critical in assessing the potential of Novostatin to favorably modify cardiovascular risk beyond its lipid-lowering effects.

**2. Objectives**

**2.1 Imaging Objectives**

* To assess changes in carotid intima-media thickness (CIMT) from baseline to Week 24.
* To compare imaging findings between subjects treated with Novostatin and those receiving placebo.

**2.2 Biomarker Objectives**

* To quantify changes in hs-CRP and IL-6 levels from baseline to Week 24.
* To evaluate the relationship between lipid-lowering effects and changes in inflammatory biomarkers.

**3. Methods**

**3.1 Imaging Assessments**

* **Modality:** Carotid Ultrasound
* **Procedure:**  
  Subjects underwent bilateral carotid ultrasound examinations at baseline and Week 24. Standardized protocols were used across all centers to measure CIMT at the common carotid artery.
* **Analysis:**  
  Images were centrally reviewed by an independent core laboratory. The mean CIMT was calculated as the average of measurements from both sides.

**3.2 Biomarker Assessments**

* **Analytes:** hs-CRP and IL-6
* **Sample Collection:**  
  Blood samples were collected at baseline and Week 24 following an overnight fast.
* **Assays:**  
  hs-CRP was measured using a high-sensitivity immunoassay, and IL-6 levels were quantified using an enzyme-linked immunosorbent assay (ELISA). All analyses were conducted at a central laboratory accredited for biomarker testing.

**4. Results**

**4.1 Imaging Findings**

**Table 1: Carotid Intima-Media Thickness (CIMT) Summary**

| **Parameter** | **Novostatin (n = 80)** | **Placebo (n = 80)** | **Between-Group Difference** | **p-value** |
| --- | --- | --- | --- | --- |
| Baseline CIMT (mm) | 0.90 ± 0.10 | 0.92 ± 0.11 | — | — |
| Week 24 CIMT (mm) | 0.85 ± 0.09 | 0.91 ± 0.10 | -0.06 mm | 0.002 |
| Mean Change in CIMT (mm) | -0.05 ± 0.04 | -0.01 ± 0.03 | -0.04 mm | 0.002 |

**Text Summary:**  
Subjects treated with Novostatin showed a significant reduction in CIMT, with a mean decrease of 0.05 mm from baseline to Week 24 compared to a negligible change in the placebo group (p = 0.002).

**Figure 1: Mean CIMT Change from Baseline to Week 24**

*(A line graph illustrates a steady decline in CIMT in the Novostatin arm compared to minimal change in the placebo arm.)*

**4.2 Biomarker Findings**

**Table 2: Inflammatory Biomarker Summary**

| **Parameter** | **Novostatin (n = 100)** | **Placebo (n = 100)** | **Between-Group Difference** | **p-value** |
| --- | --- | --- | --- | --- |
| hs-CRP (mg/L) |  |  |  |  |
| - Baseline | 3.2 ± 1.0 | 3.1 ± 0.9 | — | — |
| - Week 24 | 2.4 ± 0.8 | 3.0 ± 0.9 | -0.6 mg/L | < 0.001 |
| IL-6 (pg/mL) |  |  |  |  |
| - Baseline | 4.5 ± 1.5 | 4.6 ± 1.4 | — | — |
| - Week 24 | 3.8 ± 1.2 | 4.5 ± 1.3 | -0.7 pg/mL | 0.001 |

**Text Summary:**  
The Novostatin group exhibited a significant reduction in inflammatory biomarkers, with hs-CRP levels decreasing by approximately 25% (from 3.2 to 2.4 mg/L, p < 0.001) and IL-6 levels showing a modest reduction (from 4.5 to 3.8 pg/mL, p = 0.001) at Week 24 compared to the placebo group.

**5. Discussion**

The imaging data indicate that Novostatin significantly reduces carotid intima-media thickness, suggesting a potential slowing of atherosclerotic progression. Concurrently, biomarker analyses reveal significant reductions in hs-CRP and IL-6 levels, which correlate with decreased systemic inflammation and improved cardiovascular risk profiles. These findings are consistent with the lipid-lowering effects observed in the trial and further reinforce the beneficial effects of Novostatin on vascular health.

**6. Conclusion**

The imaging and biomarker analyses from this Phase 2 trial demonstrate that Novostatin (Novitor) not only effectively lowers LDL cholesterol but also favorably modulates vascular structure and inflammatory biomarkers. The significant reduction in CIMT and the decrease in hs-CRP and IL-6 levels support the hypothesis that Novostatin may reduce cardiovascular risk beyond traditional lipid lowering. Based on these positive results, it is recommended to proceed to Phase 3 clinical trials to confirm these findings in a larger patient population.

**Prepared by:**  
John Miller, CRA  
Date: September 30, 2024

**Reviewed by:**  
Susan Roberts, Senior CRA  
Date: September 30, 2024

**Approved by Investigator:**

Dr. Jane Doe  
Date: September 30, 2024