Introduction

- Non-alcoholic fatty liver disease (NAFLD) is emerging as an important cause of liver disease in India.
- Urbanization leading to sedentary lifestyle and fat rich diet, and a higher inherited tendency for diabetes mellitus makes Indians more prone to metabolic syndrome or insulin resistance and its manifestations such as NAFLD, 1, 2, 3
- Saroglitazar is the world’s first commercially available dual PPAR α and γ agonist which is approved for diabetic dyslipidemia and nonalcoholic fatty liver disease (NAFLD) associated with dyslipidemia in type 2 diabetes.
- PPAR-α action of Saroglitazar improves lipid parameters and PPAR-γ action improves insulin sensitivity. 4
- Phase-3 trials of saroglitazar have proved its efficacy in improving lipid and glycemic parameters. 5, 6

Methods

- This is a single centre, single arm, prospective, open label study of saroglitazar.
- Patients with type 2 diabetes and associated dyslipidemia were screened for the presence of NAFLD through ultrasound elastography (fibroscan), patients who had sonographic evidence of NAFLD were included in this study.
- Total 221 patients with type 2 diabetes, dyslipidemia and NAFLD were identified and included in this study.
- All patients were on ongoing anti diabetic medications.
- Saroglitazar 4mg once daily was initiated in all patients and follow-up was done at 12 week and 24 week period.
- Standard lipid lowering and anti-diabetic as per usual care were continued.
- The changes in laboratory parameters from baseline to 24 week follow up were statistically evaluated using paired “t” test.

Results

Table 1. Baseline demographics (n=221)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age, years</td>
<td>58</td>
</tr>
<tr>
<td>Male patients, n(%)</td>
<td>129 (58%)</td>
</tr>
<tr>
<td>BMI (kg/m2)</td>
<td>28.9</td>
</tr>
<tr>
<td>Patients on statin therapy (%)</td>
<td>48%</td>
</tr>
<tr>
<td>Mean duration of diabetes (years)</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Table 2. Change in lipid and glycemic parameters after 24 weeks follow-up

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Baseline</th>
<th>After 24 weeks</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triglycerides (mg/dL)</td>
<td>321</td>
<td>129</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>HbA1c (%)</td>
<td>8.9</td>
<td>8.1</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Figure 1. Change in liver enzymes at 24 weeks follow-up

Discussion

- Currently all therapies of NAFLD and NASH are experimental.
- Saroglitazar has been found to be safe and effective in pivotal phase 3 randomized, controlled clinical trials conducted in patients with hypertriglyceridemia in type 2 diabetes.
- In current study, 39% patients of diabetic dyslipidemia showed improvement in fatty liver on fibroscan evaluation.
- A biopsy driven randomized, controlled clinical trial is required to establish the efficacy of saroglitazar in patients with NAFLD and NASH.

Conclusion

- 24 weeks treatment with saroglitazar 4 mg once daily significantly improves liver enzymes and fibroscan findings along with lipids and glycemic parameters in patients of NAFLD with dyslipidemia in type 2 diabetes.
- Saroglitazar can be a potential therapeutic option for the treatment of NAFLD and NASH associated with metabolic syndrome.

Bibliography

6. Diabetes Technol Ther. 2014 Feb;16(2):63-71