Objective

To examine whether oral fluoroquinolone prescriptions are associated with an increase in subsequent rhegmatogenous retinal detachment and symptomatic retinal breaks in a large, population-based cohort.

Methods / Outcome Measures

Methods: Procedure codes were used to identify retinal detachment repair and prophylaxis procedures occurring within 1 year of prescription dates. Travel clinic, pro nata, and self-treatment prescriptions were excluded. Patients with tractional RD, previous RD repair, endophthalmitis, and necrotizing retinitis were excluded, as were those with intracocular surgery or severe head/eye trauma ≤ 90 days prior to the procedure.

Main Outcome Measures: Rates of retinal detachment repair and prophylaxis procedures within 7, 30, and 365 days of the first prescription were calculated and compared to antibiotic prescription cohorts using Chi-square tests. Retinal detachment repair rates were also compared to the expected Olmsted County, Minnesota rates using the one-sample log rank test.

Retinal detachment procedures following 1st prescription

<table>
<thead>
<tr>
<th>Time (days)</th>
<th>Fluoroquinolone (n=69,079)</th>
<th>Macrolide (n=21,919)</th>
<th>β-lactam (n=69,079)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-7 days</td>
<td>0% 0.01% 0.00% 0% 0%</td>
<td>0% 0.06% 0.01% 0% 0%</td>
<td>0% 0.01% 0.01% 0% 0%</td>
<td>&gt;0.05</td>
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<tr>
<td>0-30 days</td>
<td>0.05% 0.01% 0% 0%</td>
<td>0.00% 0.00% 0% 0% 0%</td>
<td>0.00% 0.00% 0% 0% 0%</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>0-365 days</td>
<td>0.00% 0.00% 0% 0%</td>
<td>0.00% 0.00% 0% 0% 0%</td>
<td>0.00% 0.00% 0% 0% 0%</td>
<td>&gt;0.05</td>
</tr>
</tbody>
</table>

Fluoroquinolone prescription data

- Oral fluoroquinolones were prescribed for 38,046 patients (macrolide n=48,074, β-lactam n=69,079) during the study period.
- Retinal detachment repair procedures were performed within 365 days of the first antibiotic prescription in 0.03% of the fluoroquinolone, 0.02% of the macrolide, and 0.03% of the β-lactam cohorts (p<0.005).
- Retinal detachment prophylaxis procedures for symptomatic retinal breaks were performed within 365 days of the first study period antibiotic prescription in 0.01% of the fluoroquinolone, 0.02% of the macrolide, and 0.02% of the β-lactam cohorts (p<0.005).
- Similar comparisons of treatment rates within 7, 30, and 90 days of the first prescription were all non-significant between cohorts.
- Post-fluoroquinolone retinal detachment repair rates were similar to expected (38.6 per 100,000/year vs 28.8 per 100,000/year for age- and sex-matched historical rates, p<0.05).

Conclusions

Oral fluoroquinolone use was not associated with an increased risk of rhegmatogenous retinal detachment or symptomatic retinal breaks in this population-based study.

References