Objective: The aim of this study is to evaluate the effect of calcium-rich feed in the development of tympanosclerosis in rats with acute otitis media and otitis media with effusion and to compare the effects of these conditions in the formation process of tympanosclerosis. Materials and Methods: Thirty rats were equally divided into six groups. The first two groups were used as control. The first group was fed calcium-normal feed, while the second group was fed calcium-rich feed. The third group (otitis media with effusion) and fourth group (otitis media with effusion) were calcium-normal and calcium-rich feed, respectively. The fifth (acute otitis media) and sixth groups (acute otitis media) were fed calcium-normal and calcium-rich feed, respectively. Otitis media with effusion was induced with transtympanic injection of histamine dihydrochloride. Acute otitis media was induced with transtympanic injection of suspension of Streptococcus pneumonia. Calcium content of feeding for calcium-normal and calcium-rich feed were 0.67% and 3%, respectively. Results: Total serum calcium values were higher in calcium-rich feed groups than calcium-normal feed groups. However, total serum calcium levels were within normal limits in both groups (2.61±0.07 mmol/l and 2.54±0.07 mmol/l, respectively). Comparing the groups of otitis media with effusion, the formation process of tympanosclerosis was higher in the calcium-rich feed group than in the calcium-normal feed group; there was a statistically significant difference. However, there was no statistically significant difference between calcium-rich and calcium-normal feed groups in the acute otitis media and control groups regarding the formation process of tympanosclerosis. There was also no statistically significant difference between the otitis media with effusion and acute otitis media groups. Conclusion: Experimental otitis media with effusion and acute otitis media are effective in the formation of tympanosclerosis. There is no significant difference between the effects of these pathologies in the formation process of tympanosclerosis. Calcium-rich feed is effective in experimental otitis media with effusion in the formation process of tympanosclerosis but not in acute otitis media. Furthermore, calcium-rich feed is not the reason for hypercalcemia. Submitted: 27 December 2011 Acc