Previous studies with coarse-resolution global climate models (GCMs) have widely shown that extensive deforestation in the Amazon leads to a reduction in precipitation, with a potential irremediable loss of the rainforest past a critical threshold. However, precipitation in the Amazon region is of convective nature and thus has to be parameterized in coarse-resolution GCMs, limiting confidence in the results of such studies. To bypass this limitation, this study aims to investigate the impact of Amazon deforestation on precipitation in global climate simulations that can explicitly represent convection. The simulations are conducted with the ICON-Sapphire atmosphere-only model configuration run with a grid spacing of 5 km for two years. To understand the impacts of Amazon deforestation, we compare the results of a complete deforestation simulation with a control simulation. Results show no significant change in precipitation during the wet season and a slight decrease of precipitation during the dry season in the deforested simulation. Precipitation decreases due to decreased evapotranspiration are compensated by enhanced moisture convergence.