Introduction Visual loss is a rare complication of hemodialysis and usually occurs in the setting of intradialytic hypotension which is quite common. The combination of hypotension and hemorrhage tends to result in posterior ischemic optic neuropathy. Case Report A 71-year-old woman was referred from the emergency department for a 8-hour history of painless blurred vision in both eyes, associated to gastrointestinal hemorrhage for 15 days a cause of diverticulosis, which required blood transfusions. The patient had been undergoing continuous ambulatory hemodialysis since age 35, with severe intradialytic hypotensive episodes, the last one was carried the day before. The blood pressure was 85/58 mmHg, the hemoglobin was 9.8g/dL, and the hematocrit was 26.8%. Pupils were nonreactive to light. Fundoscopy showed bilateral swollen optic disks and occasional flame-shaped disk hemorrhages. Full neurologic examination was otherwise normal. A diagnosis of anterior ischemic optic neuropathy (AION) secondary to arterial hypotension was made. Corticosteroid treatment was started, but it was discontinued after a few days by hallucinations. The patient was evaluated for 4 months with visual acuity, visual fields, and retinal nerve fiber layer and ganglion cell layer optical coherence tomography. Discussion It has been shown that both hypotension and anemia are risk factors for the development of AION. Despite this association only 13 cases of AION in patients with renal replacement therapy have been documented in the literature. AION is an ischemic event with poor visual recovery. Ganglion cell layer optical coherence tomography is a good prognostic marker.