OBJECTIVE: Gamma knife radiosurgery GKS for the treatment of the patients with Neurofibromatosis type 2 (NFII) is used for many years to achieve better tumor control, and to avoid postoperative neurological deficits. This study aimed at exploring the effect of GKS on the control rate, factors affecting such control, neurological morbidity, and the hearing preservation with such management. METHODS: Between February 2002 and October 2012, seventy-nine patients with vestibular schwannomas associated with NF II were treated by gamma knife radiosurgery at our centre. Fifty-seven patients harbouring 91 tumours were available for follow up for a minimum of 12 months after treatment. The follow up duration ranged from 12 to 126 months (mean 47.8 months). We treated 31 females (54 %) and 26 males (46 %) with a mean age of 26.8 years (range 9-56 years). Twenty one lesions (23.1%) were correlated to a family history of NFII. Seventy-two lesions were bilateral (79.1%). Thirty-six lesions (39.6 %) had previous surgeries, and only three lesions (3.3%) received previous radiotherapy. Before treatment, 45 lesions (49.5%) were associated with serviceable hearing. The mean target volume was 3.26 cc (range 0.1 to 27.5 cc). The mean marginal dose was 11.93 Gy (range 8 to 13 Gy), with a mean isodose of 52.57% (range 40-95%), and mean percent coverage was 94.23% (range 77-100%). RESULTS: Regarding the overall radiological response, 24 lesions (26.4%) had regressed, 57 (62.6%) remained stable, and 10 (11%) had progressed with 89% tumor control. Progression free survival at 3, 5, and 10 years were (99, 91.8, and 42.9 %). Univariate analysis showed that better tumor control correlates with older age, smaller lesion size, and follow up duration. While, preserved hearing correlates with younger age, smaller lesions, hearing grade, and no previous surgery or radiotherapy. The multivariate analysis showed that the tumor control was affected by bilaterality, family history, and selectivity index. Regarding the hearing outcome, it was affected by age and bilaterality. Edema developed in only 4 lesions (4.4%). Three patients complained of facial palsy which was temporary and resolved after medical treatment in less than a year. Using a median dose of 12 Gy maintained serviceable hearing in 27 lesions with a 60% hearing preservation rate. CONCLUSION: Gamma knife radiosurgery for NFII patients is a safe and effective treatment modality that can achieve excellent tumor control with preserved hearing and low risk of neurological morbidity.