

7. Auditory

PATIENTS WITH RISK FACTORS

Enquire at Long Term Follow Up clinic re auditory symptoms, especially:

- 1) Hearing acuity
- 2) Speech development
- 3) School and social functioning with respect to hearing and speech

INVESTIGATION

On completion of treatment, perform

- 1) Pure tone audiogram
- 2) Paediatric ENT / Audiology assessment (infants) – including behavioural audiometry, and rarely, otoacoustic emissions or auditory brainstem responses

MANAGEMENT OF HIGH RISK PATIENTS

- 1) Symptomatic patients – refer to Paediatric ENT / Audiology, and to Speech Therapy (where appropriate).
- 2) Infants and pre-school children treated with cisplatin or high-dose carboplatin – consider referral to Paediatric ENT / Audiology.
- 3) Children with significant hearing impairment - liaise with Education and Community Paediatric services.

RISK FACTORS

- Cisplatin, especially cumulative dose >400 mg/m²
 - Carboplatin (ototoxicity uncommon and usually less severe, but may be clinically significant after high-dose carboplatin)
- Other risk factors that may cause or increase hearing impairment:*
- Prior cranial radiotherapy to field including middle ear (especially posterior fossa) may enhance hearing loss
 - Age <5 years at treatment
 - Treatment with other ototoxins (eg aminoglycosides)
 - Impaired renal function at time of platinum treatment (leading to higher systemic platinum exposure)

REFERENCES

- Review** 1) Skinner R. Best practice in assessing ototoxicity in children with cancer (editorial). *Eur J Cancer* 2004; **40**: 2352-2354.
- Specific** 1) Walker DA, Pillow J, Waters KD, Keir E. Enhanced cis-platinum ototoxicity in children with brain tumours who have received simultaneous or prior cranial irradiation. *Med Pediatr Oncol* 1989; **17**: 48-52.
2) Skinner R, Pearson ADJ, Amineddine HA, Mathias DB, Craft AW. Ototoxicity of cisplatin in children and adolescents. *Br J Cancer* 1990; **61**: 927-931.
3) Brock PR, Bellman SC, Yeomans EC, Pinkerton CR, Pritchard J. Cisplatin ototoxicity in children: A practical grading system. *Med Pediatr Oncol* 1991; **19**: 295-300.
4) Parsons SK, Neault MW, Lehmann LE, *et al*. Severe ototoxicity following carboplatin-containing conditioning regimen for autologous marrow transplantation for neuroblastoma. *Bone Marrow Transplant* 1998; **22**: 669-674.
5) Li U, Womer RB, Silber JH. Predicting cisplatin ototoxicity in children: the influence of age and cumulative dose. *Eur J Cancer* 2004; **40**: 2445-2451.