Letter to the Editors

Inadvertent intrathecal administration of rifampicin

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Rifampicin is a broad-spectrum antibiotic against bacterial pathogens and is a key component of anti-TB therapy [1]. Rifampicin is usually administered orally. Intrathecal administration of rifampicin is not recognized and is under trial [2]. We report an incident of inadvertent intrathecal rifampicin administration with no adverse effects.

A forty-one year old patient underwent revision of his spinal decompression. The procedure was complicated with postoperative infection confirmed with MRI. The patient underwent debridement and intrathecal pus was noted discharging through a dural tear. Intrathecal catheter was inserted for intrathecal vancomycin. The patient was prescribed intravenous rifampicin. The rifampicin was connected to the intrathecal catheter with a rate of 125 ml h⁻¹ (600 mg). The infusion was given for a period of 4 h before mistake was identified and was discontinued. The patient did not show any reaction to the intrathecal rifampicin. No new neurological signs were noted and the patient was closely monitored. The patient's urine became orange coloured characteristic of rifampicin administration.

The rifampicin belongs to the group of complex macrolide antibiotics produced by *Streptomyces mediterranei* [3]. Rifampin acts by inhibiting DNA-dependent RNA polymerase of mycobacteria and other microorganisms by forming a stable drug-enzyme complex leading to suppression of initiation of chain formation in RNA synthesis. When given orally the drug is absorbed and is distributed throughout the body and is found in effective concentrations in many organs and body fluids including CSF [4].

Intrathecal rifampin is under trial and still not used in human beings. The side-effects of intrathecal use are not known. Intravenous preparation has trace doses of formaldehyde. Our patient received 600 mg of rifampin intrathecally over 4-h period. No adverse events occurred. No side-effects noted at 6-month follow-up.

Inadvertent uses of medications are reported in the literature even though strict precautions are followed during the administration. No adverse events occurred during this patient's intrathecal administration of rifampicin.

References

- 1 Sensi P. History of the development of rifampin. *Rev Infect Dis* 1983; 3: 402–406.
- 2 Everett ED, Strausbaugh LJ. Antimicrobial agents and the nervous system. *Neurosurgery* 1980; 6: 691–714.
- 3 Farr BF. Rifamycins. In: Mandell, Douglas and Bennett's Principles and Practice of Infectious Diseases 5th edn (Mandell GL, Bennett JE, Dolin R eds) Philadelphia: Churchill Livingstone Inc. 2000; pp. 348–361.
- 4 Sippel JE, Mikhail IA, Girgis NI, Youssef HH. Rifampin concentrations in cerebrospinal fluid of patients with tuberculous meningitis. *Ann. Rev. Respir Dis*, 1974, 109: 579–580.

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