Methods We conducted a prospective observational study of tracheostomy tube changes for patients admitted from home and those weaning from invasive ventilation in our unit. Data were collected from February to May 2014.

Results Eighteen patients receiving domiciliary tracheostomy ventilation attended during the study period. Eight patients had silver tubes, 7 had plastic cuffed tubes with inner cannulae and 1 had a plastic uncuffed tube with inner cannula. Two weaning patients were included and underwent five tracheostomy changes between them.

Data were obtained for 34 tube changes during the study period. Thirty were routine tube changes and 4 were expedited for reasons including stomal leak and partial dislodgement. Plastic tubes with inner cannulae were changed in accordance with the European Economic Community directive (1), with a mean of 28 days between tube changes. Sixteen (47%) were undertaken by consultant and 18 (53%) by trainee physician.

There were no complications in 31 (91%) tube changes. Three had minor complications such as minor bleeding and one patient who receives 24 hr home tracheostomy ventilation needed bagging and suction to clear secretions. Bronchoscopy was performed in 30 (88%) following tube change to clear respiratory secretions, check tube position and sometimes in response to a difficult tube insertion.

Conclusion No major complications occurred during the study period. This is probably because the procedure is undertaken by experienced personnel in a controlled environment. The threshold for post procedure bronchoscopy appears to be low and we are currently reviewing this aspect of our practice.

REFERENCE

1 Intensive care society. Standards for the care of adult patients with temporary tracheostomy. 2008

Tackling tuberculosis

M35 ADVERSE EFFECTS OF LATENT TUBERCULOSIS TREATMENT IN MIGRANTS

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Background Most cases of tuberculosis (TB) in the UK occur in migrants. The majority develop active TB within 5 years of arriving in the UK, usually due to reactivation from latent tuberculosis infection (LTBI). Therefore identifying and treating LTBI in migrants who are at risk of reactivation, is critical to reduce rates of active TB. It is, however, unclear if migrants develop any significant adverse effects from chemoprophylaxis (Rifampicin and Isoniazid), which subsequently affects adherence.

Aim To assess the type and frequency of adverse effects in migrants on treatment for LTBI.

Methods A retrospective study was conducted within our Trust between 1st January 2007 and 31st December 2012. Records of patients between the ages of 16–35, who had lived in the country for less than 5 years and received chemoprophylaxis, were examined.

Results 472 patients treated for LTBI were included. Mean age was 30.4 ± 7.4 years and 54.8%(259) were males. Ethnic origin included: Indian subcontinent 327(69.3%), African 113(24%), Caucasian 14(3%) and other 18(3.8%). Hepatitis B was detected in 5 cases (1%), hepatitis C in 2 cases (0.4%) and HIV was present in 1 case (0.2%). 19(4%) patients experienced adverse effects. 13(2.7%) reported gastrointestinal symptoms (nausea, vomiting), 4(0.8%) developed a skin rash and there was 1(0.2%) case of thrombocytopenia. Three of the 4 cases who developed a skin rash stopped ATT, and all three patients developed active TB two to four years later. One patient developed peripheral neuropathy due to Isoniazid. Drug induced hepatitis with a rise in ALT greater than three times the upper limit of normal was present in 15 patients (3.1%). An increase in bilirubin level greater than two times normal was recorded in 5 patients (1%). One patient who had concurrent hepatitis B was hospitalised due to hepatotoxicity.

Conclusion Treatment for LTBI in migrants below the age of 35 is safe, associated with a low risk of hepatotoxicity and should be feasible in primary care. Adverse effects should be managed promptly to ensure treatment adherence and prevention of progression to active TB.

M36 EVALUATING AEROSOL ADMINISTRATION OF A CANDIDATE TB VACCINE MVA85A

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There is an urgent need for a better vaccine against TB than BCG, which confers variable protection against pulmonary TB, the main source of TB transmission.

Heterologous prime-boost vaccination regimens using virally-vectored vaccines induce strong cellular immune responses and are a leading strategy for TB vaccine development. Boosting BCG with MVA85A, a recombinant viral vector expressing antigen 85A, can enhance BCG induced protection in animal models. MVA85A in humans is safe and immunogenic when administered systemically.

Animal data suggests delivering a vaccine to the respiratory mucosa may be the most protective route. We recently completed the first trial where a virally-vectored vaccine, MVA85A, was delivered to humans by aerosol; and was found to be safe and highly immunogenic. This route also has potential for dose-sparing.

A limitation of virally-vectored vaccines is anti-vector immunity, which limits use and re-use.

Non-human primate data with aerosolised MVA85A suggests that aerosol vaccination induces less systemic anti-vector immunity than systemic routes. We have demonstrated this is also true in humans in our first aerosol trial, where humoral anti-vector immunity to MVA was induced by volunteers vaccinated by the systemic route but not the aerosol route.

An on-going trial now addresses the question, if alternating routes of vaccination can abrogate anti-vector immunity, by immunising twice with MVA85A by heterologous routes one month apart.

This would be an important development for the development of aerosolised TB vaccines but also for new vectored vaccines for RSV, universal influenza and a range of bacterial respiratory pathogens.