

# Intravenous or oral antibiotic treatment in adults and children with cystic fibrosis and *Pseudomonas aeruginosa* infection: the TORPEDO-CF RCT

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## Plain English summary

### The TORPEDO-CF RCT

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## Plain English summary

Cystic fibrosis is a genetic condition that affects mucous glands, causing sticky mucus in the lungs and digestive system. People with cystic fibrosis are prone to lung infection with a bacterium called *Pseudomonas aeruginosa*, which can lead to serious long-term complications and death. It is possible to eradicate *P. aeruginosa* if antibiotics are started promptly and taken for several months.

The Trial of Optimal TheRapy for Pseudomonas EraDicatiOn in Cystic Fibrosis (TORPEDO-CF) was designed to find out if intravenous ceftazidime and tobramycin were better at eradicating *P. aeruginosa* than oral ciprofloxacin.

A total of 286 children, young people and adults with cystic fibrosis joined the study from 70 UK and two Italian centres. Approximately half of the participants received treatment with intravenous antibiotics and half with oral antibiotics. All participants received inhaled colistin for 3 months and were followed up for a minimum of 15 months.

We studied whether or not either treatment eradicated *P. aeruginosa*, and if reinfection happened during follow-up. We also collected data on lung function, other chest infections and hospital admissions, and examined whether or not one treatment was more cost-effective than the other.

In total, 15 adults joined TORPEDO-CF, so the study population may not totally match the wider cystic fibrosis population; however, in TORPEDO-CF, we found that intravenous antibiotics did not achieve persistent eradication of *P. aeruginosa* in a greater proportion of cystic fibrosis patients. We also found that oral antibiotics were more cost-effective than intravenous antibiotics. The intravenous antibiotics group had fewer hospital admissions during follow-up, but, as they were usually admitted for their initial treatment, this was not considered an advantage over the oral antibiotics group.

The TORPEDO-CF results do not support the use of intravenous antibiotics to eradicate *P. aeruginosa* in cystic fibrosis and, when the findings of this trial are applied in routine clinical practice in the NHS, patients will most likely receive oral treatment as an outpatient, avoiding the need for hospital admission.



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