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Title: Is there a delay in diagnosis of post infectious obliterative bronchiolitis (PBO)?

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Body: Background: PBO, an orphan lung disease results following an antecedent severe viral lower respiratory tract infection (LRTI), commonly due to adenovirus. The clinical symptoms of PBO are non-specific. This may result in a significant delay in diagnosis. Methods: We retrospectively examined the medical records of children with PBO to determine the time from initial illness to diagnosis based on clinical and radiological criteria as follows: 1. History of antecedent viral LRTI 2. Evidence of airway obstruction (clinical or spirometry) 3. Radiological investigations consistent with PBO Results: Of the nine cases identified over last 17 years, adenovirus (n=7) was the main organism implicated in the initial infection in keeping with description in literature. Common referrals were for difficult or severe wheeze, exercise limitation, recurrent respiratory infections or bronchiectasis. The diagnosis was made earlier in children who had a persistent oxygen requirement or were admitted under the care of respiratory paediatricians.

Age at initial illness and at diagnosis

| | Age months Median(range) |
|---------------------|--------------------------|
| Initial severe LRTI | 21 (12-54) |
| Diagnosis confirmed | 49 (18-171) |

Conclusions: There is a significant delay in diagnosis of PBO in our experience. Severe LRTI especially with adenovirus and a prolonged oxygen requirement at initial presentation followed by persistent respiratory symptoms should prompt further investigations. Confirmation of the diagnosis leads to better understanding of the disease for the child with the opportunity to network with other children with rare diseases, could lead to potentially disease modifying treatment like Azithromycin and avoid unnecessary treatment for asthma.

