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Description and outcomes of children requiring long term domiciliary oxygen therapy at Chris Hani Baragwanath Academic Hospital from January 2011 to December 2015

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ABSTRACT

Background: A significant number of paediatric patients are discharged from hospital on long-term domiciliary oxygen therapy (LTDOT). There is, insufficient research investigating the indications and outcomes of the use of LTDOT in low and middle-income countries with a high prevalence of Human Immunodeficiency Virus (HIV) such as South Africa.

Objectives: To describe the diagnosis, clinical characteristics, and the outcomes of children requiring LTDOT at Chris Hani Baragwanath Academic Hospital (CHBAH) in South Africa.

Methods: A retrospective descriptive study on hospital records of children on LTDOT between January 2011 and December 2015. The population included children aged16 years and younger who received LTDOT from the paediatric pulmonology department at CHBAH.

Results: The study included 390 participants (57.5 % males n=172). The median age at initiation was 4.8 (2.1-25.2) months with a median duration of 6.5 (3.2-14.0) months. The prevalence of HIV exposure was 51.3 % n= 116 and 60.3 % n=70 were HIV infected. The majority (89.6 % n= 343) of the participants required full time (24 hours/day) LTDOT, at oxygen flow rates commonly set between 1-2 L/min. Most, 80.3 % n= 248, had a respiratory diagnosis with 67.3 % n=167 being due to neonatal lung disease and 25 % n= 62 being due to an infectious or post-infectious cause. At the six month time point, 20.3 % n=79 of the participants had been weaned off LTDOT and 35.4 % n=138 were weaned off by 12 months. HIV infected participants were found to start LTDOT at ages older than one year 2.28(0.55-9.33) years, when compared to HIV uninfected participants 0.46 (0.21-2.23), p <0.0005 and were 2-fold (OR 2.08, 95% CI 1.07-4.11) more likely to be weaned off LTDOT by 12 months. They also had a high prevalence of infectious or post-infectious respiratory diagnoses OR 5.89, 95 % CI 2.97-11.84 . We found significant differences in duration on oxygen between HIV infected 1.06 (0.33- 4.81) compared to 0.54 (0.04-3.29) years in HIV uninfected participants; p=0.034.

Conclusion: The majority of patients requiring LTDOT at CHBAH do so for respiratory causes, especially those acquired in the neonatal period. Two thirds of patients are weaned off oxygen therapy within 12 months of commencing LTDOT. HIV infected participants were on LTDOT for longer durations than uninfected participants but had a higher prevalence of post infectious bronchiolitis.