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Title: Tracheobronchomalacia in children- a ten year experience from Vestfold County Norway

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Body: Background Tracheobronchomalacia (TBM) is generally considered underdiagnosed in children, but the actual incidence remains unknown. Symptoms often mimic other respiratory disease like bronchial asthma. Flexible bronchoscopy has been the gold standard for diagnosing TBM, but the test requires general anaesthesia and it has methodological limitations. Cine fluoroscopy has a high positive predictive value. It is a quick, non- invasive test and it does not require general anaesthesia or a cooperation. Methods: We retrospectively reviewed the medical records of all children from Vestfold county in Norway, who were diagnosed with tracheobronchomalacia (ICD diagnosis Q32) from January 2001 through May 2012. Results: We identified 75 patients. (63% male. 21 born prematurely). Coughing and rattling were the main symptoms. Median age of symptom debut was 1 month. 69/75 were diagnosed after positive cine fluoroscopy and only a minor part (6/75) after bronchoscopy. Seventy-three percent of the children were diagnosed during the last 5.5 years of the observation period time. Sixty-one children (81%) had respiratory distress requiring hospital admissions at least once. Median age for first admission was 4 month range(0-43). Preterm infants used significantly more inhaled steroids compared to matures at the age of one year ($p = 0.035$). 52 % had asthma diagnosis at any time, but this was only confirmed for 13 %. Conclusion: Cine fluoroscopy should be performed with a low threshold in infants with onset of coughing and rattling during the first month of life or within children having respiratory symptoms not responding at conventional asthma therapy.