Abstract Presentations

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Markers of Air Way Inflammation, and respiratory function among Adult Asthma Patients attending primary care clinics in Sri Lanka.

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Introduction

- Most asthma patients diligently attend asthma clinics routinely

- However the asthma control amongst patients is unknown.

- Spriometry is an expensive procedure to routinely conduct in primary care clinics

- Asthma control can be easily monitored by the ACT (asthma control test) the

- PEFR and the FeNO in primary care

- Asthma severity and control can be easily monitored by the peak expiratory flow rate and exhaled breath nitric oxide levels are often used in respiratory clinics of developed countries to monitor asthma severity and control.

Asthma Control Questionnaire, and use of PEFR and FeNO in Asthma

Asthma Control Test –
- consists of six items
    - 5×symptoms,
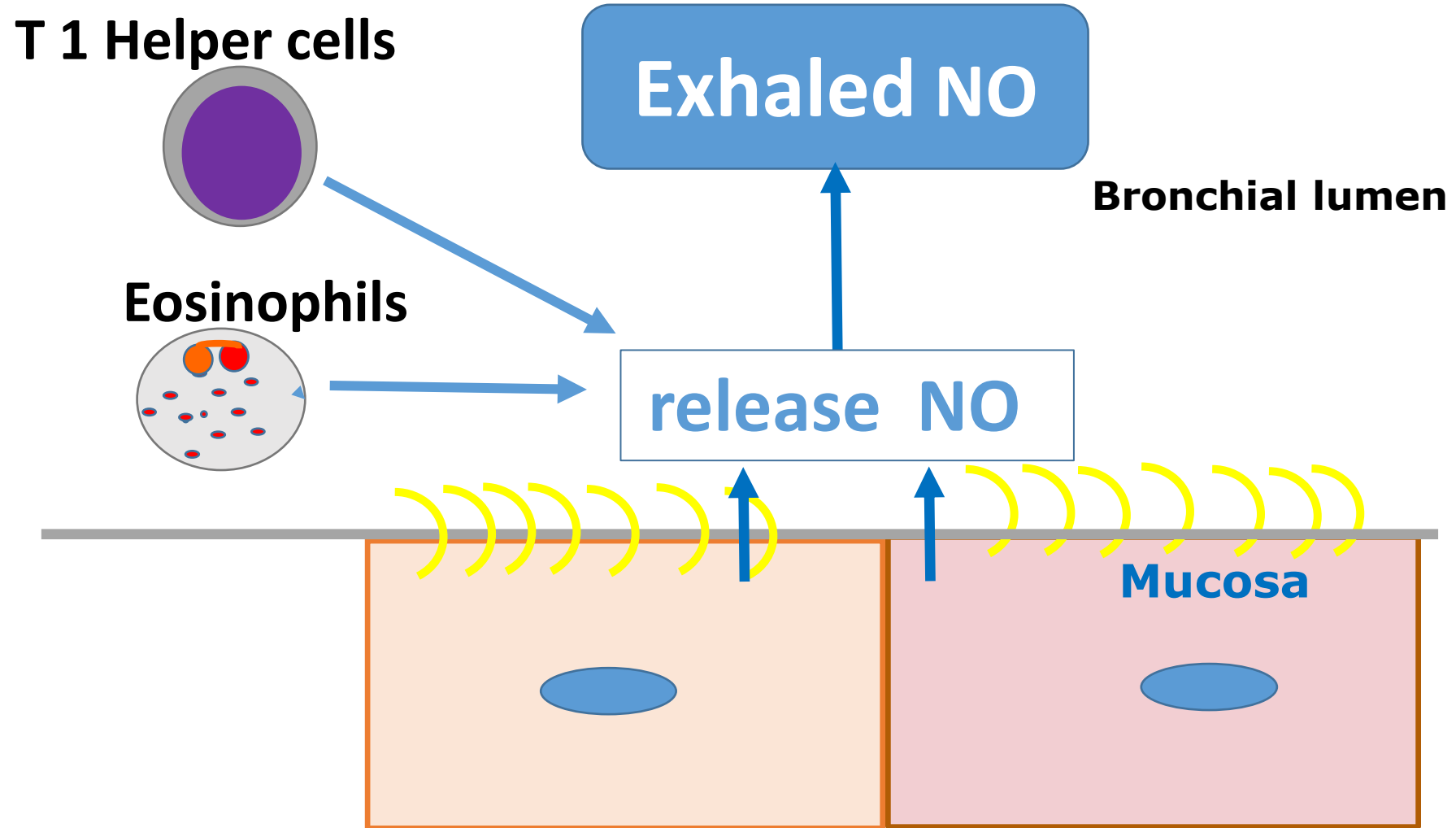   - rescue bronchodilator use

PEFR
- bedside test - assess the velocity of expired air.
- commonly used in Primary care - determine severity of asth

FeNO
- Inflammation of airways increases level of breath NO
- :. expired Nitric oxide levels in breath - indicate inflammation
- Values - parts per breath (ppb)

Objectives

- 1. to determine the respiratory function by the Peak Expiratory Flow rate (PEFR),

- 2. to determine the inflammation of airways by measurement of Fraction of exhaled Nitric oxide levels (FeNO)

- 3. to determine medication adherence of asthma patients attending a primary care clinic.

Method of data collection

Selected patients Diagnosed with asthma attending primary care clinics – ethics approved
n=80

Informed written consent

Interviewer administered questionnaire & anthropometric measurement

Assessment of PEFR by mini Wright compatible Peak flow meter

Assessment of exhaled breath nitric oxide (FeNO) monitor -

Assessment of medication adherence by Morisky Green Lavine Scale

Results Table 1: Baseline data

Parameter(n = 80)	Results
Ethnicity	Sinhala- 83% Tamil - 10% Moor - 5% Other -2%
Gender	Female - 56% Male - 44%
Education Level	Up to O/L– 58.5%
Employment	Unemployed – 28%
Monthly Income	More than Rs.30 000/= 43%

Table 4:Asthma Control Questionnaire Score amongst the Study Population.

	Females n=45 (%)	Males n=35 (%)
Asthma Control Score ≤ 6	16 (35%)	14 (40%)
Asthma Control Score > 6	29 (65%)	21(60%)

Majority of the population did not have good Asthma Control. The mean asthma control Score is poor (10.74 $\pm$ 7.2SD)

Table 5: Assessment of Respiratory Function

Variables	Female Mean (± SD) n =78	Male Mean (± SD) n=62	p value
PEFR	297L/min (± 78.0)	281.2 L/min(± 93.5)	(p<0.05)
FeNO	29ppb (± 10.4)	27.9 ppb (± 10.4)	(p<0.05)

51% of females and 46% of males had high FeNO levels (>25ppb) indicating airway inflammation.

Table 7:Medication Adherence by Morisky Green Lavine Scale.

Total Score	Frequency	Percentage(%)
0	8	5
1	15	10.5
2	28	20
3	39	28
4	50	35.5

Morisky Green Lavine Scale Assessed adherence to medication. Poor adherence was observed in 38% females and 29% males

Conclusions and Recommendations

Despite medication adherence most patients had poor asthma control as indicated by the ACQ, FeNo and PEFR.

FeNO and PEFR are reliable, easy to use measures that could be used to objectively monitor asthma patients in clinics.

Urgent measures should be taken to determine possible precipitants and improve asthma control amongst these patients.

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References

Bender, B.G. and Bender, S.E., 2005. Patient-identified barriers to asthma treatment adherence: responses to interviews, focus groups, and questionnaires. Immunology and allergy clinics of North America, 25(1), pp.107-130.

<http://www.sciencedirect.com/science/article/pii/S088985610400093>

Juniper, E.F., Svensson, K., Mörk, A.C. and Ståhl, E., 2005. Measurement properties and interpretation of three shortened versions of the asthma control questionnaire. *Respiratory medicine*, *99*(5), pp.553-558.

<https://www.resmedjournal.com/article/S0954-6111(04)00392-0/abstract?code=yrmed-site>