Case study: Laura

About this case study

What is included in this case study?

This case study consists of materials to print out for use directly as they are, or for adaptation to suit particular audiences.

There are pages to print out to form hand out notes for participants, broken down into two parts.

Facilitator notes to print out are also included, to guide the leader of a discussion workshop based on the case.

Pages showing the case summary to prompt questions are also included. These are available as powerpoint slides.

Who can use this case study?

The materials are designed for use by a facilitator with a small group of health care professionals, such as practice nurses, hospital nurses working in respiratory and general medicine care, GPs and junior hospital doctors working with patients with asthma (eg those in paediatrics, respiratory medicine, geriatrics and A&E).

The group should be kept small enough to encourage participation in the discussion.

A group of 8-15 may be ideal, though the materials can also be adapted for use with groups of other sizes or with individuals.

Using this case study

This case study is designed to give plenty of opportunity to discuss asthma management and key points from the revised British Guideline on the Management of Asthma (2008).

The two parts of the case study should be handed out to participants progressively, so that the story unfolds and to allow for discussion around all the salient points.

After each part has been read, the facilitator may like to initiate discussion by posing questions.
The facilitator notes give guidance on the points to bring out in the ensuing discussion. In addition to the key issues to be covered, other discussion points are suggested, together with practical issues that could be raised.

The case study should give ample opportunity to tailor the discussion to suit the needs and interests of the participants.

It is possible to use only one part of the case, if more appropriate for the participants concerned or if there are time constraints.

Learning outcomes

This case illustrates exercise-induced asthma. Asthma symptoms should not restrict activities and there should be minimal need for reliever treatment. The case also illustrates asthma in pregnancy. (section 4, pages 33-47 and especially figures 4, 5 and 6; section 7.3, 7.4, 7.5 and 7.6 pages 70-73).

After completing the first part of the case, participants should be able to:

- recognise the signs of exercise-induced asthma.

After completing the second part of the case, participants should be able to:

- advise on the value of complementary treatments for asthma
- describe the management of asthma during pregnancy.

Part 1: notes for participants

Well woman

Laura had asthma as a child, but fortunately the symptoms disappeared before adolescence. Laura is now 23 years old and works as a hotel receptionist. With her wedding day fast approaching, Laura has embarked on a fitness campaign to help her lose weight. She is avoiding animal fats, eating a high fibre diet with lots of fruit and vegetables, and trying to run every morning. However, the fitness campaign is not proving as successful as hoped. After about 10 minutes of running, Laura gets out of breath, particularly on cold mornings. Consequently, Laura was delighted with a recent invitation to attend the Well Woman clinic and went along for the assessment.

At the clinic, her peak flow was measured at 490 L/minute, slightly better than predicted for a woman of her age and height. No action was taken as Laura believed everything was fine as her PF was normal.

Part 2: notes for participants

Increasing symptoms

Six months after the start of the fitness campaign and shortly after her wedding, Laura came back to see her GP to talk about her continuing shortness of breath. Although the blue inhaler had helped with the jogging, Laura was aware of breathlessness at other times, too. Recently, her husband had complained that her night time coughing was keeping him awake. Laura had seen a programme on TV about the Buteyko method of breathing control and wondered if this would help her. She reminds you that acupuncture had helped a previous neck discomfort and thought an alternative approach to the inhaler could do the trick.

Pregnancy

Six months later, Laura was back in the surgery – she was 17 weeks pregnant and in the past 2 weeks had suffered increasing dyspnoea and cough. She knows that her best peak flow value is 500 L/min.

Part 1: facilitator's notes

The key questions for discussion are listed below, with points that should emerge during the discussion. Reference is also made to the appropriate section and page numbers in the British Guideline on the Management of Asthma. A number of other topics that could be discussed, together with practical issues, are also indicated.

A likely explanation for Laura's shortness of breath is exercise-induced asthma, or she may just be unfit! A careful history should help distinguish between the two – shortness of breath due to lack of fitness usually settles after a few minutes. However, it may take an hour or two for exercise-induced asthma to resolve. The previous history of asthma points to the possibility that current symptoms are due to asthma.

What advice would you give Laura?

Although Laura's peak flow was normal at the consultation, this does not exclude asthma – one reading is not very informative as asthma is a dynamic condition. However, Laura could be advised to keep a peak flow diary, charting the results each morning and evening, and whenever symptoms are apparent. (section 2.4, pages 11-23) - she should have been followed up following the well-woman clinic.

Practical discussion point:

Over what time period would you ask Laura to chart her peak flow measurements?

What therapy would you recommend if a peak flow diary showed a stable baseline but short lived dips after running?

This diary pattern would confirm a diagnosis of exercise-induced asthma. Management could be with a short acting bronchodilator, taken before exercise to prevent symptoms and relieve any wheeze that develops. However this may depend on how regularly she exercises. If the symptoms are frequent she may need a preventative therapy ICS. The device selected should take into account Laura's preferences, as well as her ability to use it successfully. (section 4, page 33 and section 5, pages 48-49)

Key points

- If this is probable asthma diagnose before treating – try to confirm diagnosis with objective tests before long term therapy is started; question the diagnosis if little response to treatment.

Further details on SIGN and BTS websites (www.sign.ac.uk and www.brit-thoracic.org.uk).

Part 2: facilitator's notes

The key questions for discussion are listed below, with points that should emerge during the discussion. A number of other topics that could be discussed, together with practical issues, are also indicated.

What would you advise Laura about complementary treatments for asthma?

For most patients, exercise-induced asthma is an expression of poorly controlled asthma and regular treatment should be reviewed. Protection against exercise-induced asthma is given by inhaled steroids, short- and long-acting and oral β2 agonists, theophyllines, leukotriene receptor antagonists and cromones. (section 4, pages 33-47 and see especially section 4.7.2, page 45)

Currently, there is no consistent evidence to support the use of complementary or alternative therapies for asthma. The underlying principle of the Buteyko method is to reduce hyperventilation by lowering respiratory frequency. Four clinical trials suggest benefits in terms of reduced symptoms and bronchodilator usage but no effect on lung function. (section 3.5, pages 31-32)

Practical discussion point:

Does your practice have a system to ensure that pregnant women with asthma are routinely reviewed to check asthma management is optimal?

What would you do now that Laura is pregnant if she was:

a. not distressed, slightly wheezy with respiratory rate of 20 breaths/minute, pulse 100 beats/minute and PEF of 390 L/minute?

Pregnant women with asthma should be monitored closely so that any change in asthma control can be matched with an appropriate change in therapy. Therapy can continue as normal. Remember that poorly controlled asthma represents a threat. In the circumstances given here, Laura's asthma control is suboptimal and it is worth asking about exposure to possible triggers – has Laura been trying to keep active by taking more country walks and thereby increasing exposure to pollen? If no trigger factors are apparent and given the fall in peak flow and increase in symptoms, it is appropriate to start inhaled corticosteroids, or to increase the dose, to regain control. Once controlled, the dose can be reduced. It is also appropriate to add in a long-acting bronchodilator in addition to an inhaled steroid, if symptoms persist.

b. looks dreadful, cannot complete sentences, with very quiet breath sounds on auscultation, respiratory rate 30 breaths/minute, pulse 120 beats/minute and PEF of 120 L/minute?

Acute severe asthma in pregnancy is an emergency and should be treated vigorously in hospital. Drug therapy should be given as for non-pregnant women. Oxygen should be given, with continuous fetal monitoring in severe acute asthma. There should be close liaison between the respiratory physician and the obstetrician. (section 7.3, 7.4 and 7.5, pages 70-73)

Key points

No consistent evidence supporting use of complementary or alternative treatments in asthma but Buteko can reduce symptoms (though not lung function)

- Continue usual asthma therapy in pregnancy
- Monitor pregnant women with asthma closely to ensure therapy is appropriate for symptoms.

Further details on SIGN and BTS websites (www.sign.ac.uk and www.brit-thoracic.org.uk).

Part 1: case summary

23-year old woman with history of childhood asthma
Started fitness campaign but suffers from breathlessness on exertion
At clinic, PEF normal

Part 2: case summary

Increasing symptoms
Interested in complementary therapy
Becomes pregnant

Part 1: questions

What advice would you give Laura?

What therapy would you recommend if a peak flow diary showed a stable baseline but short lived dips after running?

Part 2: questions

What would you advise Laura about complementary treatments for asthma?

What would you do now Laura is pregnant if she was:

a. **not distressed, slightly wheezy with respiratory rate of 20 breaths/minute, pulse 100 beats/minute and PEF of 390 L/minute?**

b. **looks dreadful, cannot complete sentences, with very quiet breath sounds on auscultation, respiratory rate 30 breaths/minute, pulse 120 beats/minute and PEF of 120 L/minute?**

Part 1: key point

- Remember to make an assessment of the probability of asthma. Diagnose before treating – try to confirm diagnosis with objective tests before long term therapy is started.

Further details on SIGN and BTS websites (www.sign.ac.uk and www.brit-thoracic.org.uk)

Part 2: key points

- No consistent evidence to support use of complementary or alternative treatments in asthma
- Continue usual asthma therapy in pregnancy
- Monitor pregnant women with asthma closely to ensure therapy is appropriate for symptoms.

Further details on SIGN and BTS websites (www.sign.ac.uk and www.brit-thoracic.org.uk)