Role of the nurse in management of copd

Chronic Obstructive Pulmonary Disease (COPD) is a treatable condition that is defined as being “ a disease characterised by airflow limitation that is not fully reversible. This airflow limitation is usually both progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases” (Fabbri, 2003). One in every four acute admissions to hospital is due to respiratory difficulties, and 50 per-cent of these are caused by the complications of COPD (Roberts, et al., 2001). In the United Kingdom, it is the third most common cause of overall adult morbidity and mortality, especially among smokers, (Barnes, 1999), and it is a significant burden to the NHS.

In recent years, nurse-led primary care interventions have become more widespread. Although there has so far been insufficient evidence to support their implementation, there appears to be no difference in quality of care between doctor-led and nurse-led COPD programmes (Pye, 2008), and they may offer a cost effective and holistic solution to both the NHS and patients respectively. This essay will use a case based discussion to illustrate the role of the Nurse Practitioner (NP), and nurse prescribing issues for a patient with COPD.

Case study

The patient is a 62-year-old married Caucasian female who attended for a routine primary care nurse-led COPD evaluation during 2010. The patient had no other past medical history, apart from moderate COPD. This was diagnosed three years ago, following recurrent respiratory infections, two of which had necessitated hospitalisation.

The NP had not seen this patient before and after familiarising herself with the notes and establishing a rapport with the patient took a medical history asking important questions about the history of the presenting complaint, the COPD, the patients past medical and surgical history, medication lists, allergies to medications, social history and smoking habits. The NP used a template questionnaire that was part of the COPD care pathway to identify how the COPD impacted on the patient's quality of life. She herself had introduced this questionnaire herself as a result of her own reflective learning and had based it on one from a paper by Vandevoorde, et al., (2007) that included aspects about patient symptoms that patients do not always volunteer to medical professionals, such as side effects from medication and qualitative measures of fatigue and mental well-being (Vandevoorde, et al., 2007).

Three months earlier, the patient had one exacerbation, which resulted in admission to the local hospital's medical assessment unit, and she recovered well. She occasionally had " moments of shortness of breath", but these were typically on exertion and doing other strenuous activities.

During this visit, she reported that her condition was stable. Her sputum production was approximately ¼ – ½ a cup/ day, and she needed to use 2. 5l of oxygen at night. The patient continued to smoke six cigarettes/ day, and being a much heavier smoker previously she had a history of 60 pack years. She was compliant with her regular inhalers and had no problems with side effects, apart from a bad " almost metallic" taste in her mouth that she had occasionally recently started if she had forgotten to wash her mouth after using her inhalers. She had also been started on a Corticosteroid inhaler by

the hospital respiratory team following her last exacerbation, but she mentioned that she had not noticed any difference in her COPD symptoms in using this. On direct questioning, she remembered that she also did have an unpleasantly sore mouth and voice was becoming hoarser since she had commenced using this steroid inhaler, but she didn't know if this was the effect of the steroid inhaler, the drying effects on mucous membranes of using oxygen therapy, or something else. She had noticed these symptoms for at least three weeks, and two weeks ago she had noticed " white patches" on her tongue.

Apart from oxygen, and the newly introduced Corticosteroid inhaler that she was using; in terms of her other medication, she was taking the long acting beta 2-agonist Salmeterol twice a day, and the anti-cholinergic bronchodilator, Ipratropium Bromide. She had been using both Salmeterol and Ipratropium Bromide for several years, and she had no side effects with either of these medications. Antibiotics had been stopped for some time since her last exacerbation, and she had finished her Prednisolone some time ago. Overall, from a medical perspective she felt well in herself apart from the mouth problem.

On examination, the patient spoke in short sentences, and occasionally her wording was stifled by shortness of breathe, but she did not appear to be in distress, and she was alert. Her skin was pink in colour and she appeared to be breathing with pursed lips, which is a characteristic feature of being a " pink puffer" and having the diagnosis of emphysema (Flenley, 1990). The NP then examined the patient's vital signs, checking her pulse, which was 96 beats/ min and regular. Blood pressure, was 140/ 78 mmHg, and she was

apyrexial. The NP then looked for signs of peripheral and central cyanosis by checking the colour of the patient's hands and asking the patient to show the underside of her tongue. There were none, but the patient appeared to have oral candidiasis.

The patient's hands had a fine tremor, a side effect of her taking the long acting beta 2-agonists (Rossi, et al., 2008), but when questioned, she reported that it was not a problem as she was " still able to write housework instructions to her husband". The patient's respiratory rate was slightly higher than normal at 18/ min, but this was satisfactory. The NP listened to the patient's chest and bilateral breath sounds were equal, but with a few polyphonic wheezes. There were no crackles and no crepitations were present. Heart sounds were normal. Spirometry was done, after explaination to the patient how to do the test in detail beforehand, giving the opportunity to ask questions. The patient had done the test many times beforehand, but expressed appreciation. The results showed airway obstruction and ventilatory impairment, consistent with the diagnosis of moderate COPD. A blood gas analysis was not taken, but the oxygen saturation on air was 96%. Inhaler technique was checked and this was satisfactory.

She lived with her husband, although she mentioned he had recently had to stop work due to him having ill health, and this was causing her a lot of anxiety from both the worry over his health and also the potential impact of the loss of income to their household. He had previously worked in a factory that stored and distributed flour products, and he had over several years started to develop breathing problems himself, despite him being a lifetime non-smoker. He was under investigation by the respiratory physicians, and

this was causing a significant amount of tension to both of them. She reported that when she had her last exacerbation, he had become ill at that time, and she had to help him with personal care at home for a period of time, and the increased workload caused her shortness of breath to increase. She felt that her “ energy levels had been depleted” for several weeks in the run up to her last admission to hospital, and that she “ did not even have time to smoke”.

Despite her COPD being relatively stable on this visit, the patient appeared depressed. When asked if she was depressed, she answered that she was and she was also having difficulty sleeping at night with financial issues caused by the ill-health retirement of her husband being the biggest stressor.

The NP explained to the patient that she had identified several areas that needed action and further discussion with the GP. One was on the appropriate use of the steroid inhaler, the second was the oral thrush – perhaps caused by the use of steroid inhaler (Ellepola, et al., 2001), the NP explained that there are treatments available for this that might be appropriate for her. Furthermore, she told the patient that the issue of depression needed further assessment by the GP. The patient’s medical records were updated with the findings of the assessment, as per good note keeping practice (NMC, 2009), and the patient was left in the room while the GP was consulted.

The NP presented the case to the patient’s GP and mentioned her concerns about both the depression, and also the appropriateness of using the

Corticosteroid inhaler and the oral candida. The NP recalled a lecture she had received during her course on nurse prescribing for COPD and discussed this with the GP. The GP took the opportunity to do an informal teaching session and agreed with the NP reminding her about the findings from a paper in 2000, by Barnes, which suggested that inhaled corticosteroids are not indicated for the treatment of COPD anymore. Unlike in asthma, where inhaled Corticosteroids are the mainstay of treatment, they have been found to have a limited role in the maintenance of function in patients with COPD. It was observed that only 1 in 10 patients with COPD will show a significant improvement in lung function following treatment with inhaled corticosteroids (Barnes, 2000) and the reason is thought to be that different inflammatory mediators are accountable for the airway hyper reactivity that is present in asthma and COPD, and those that are responsible for COPD are less responsive to inhaled steroids (Barnes, 2000). Respiratory physicians will still use them, but usually only in cases where symptoms are not optimally controlled with bronchodilators alone (Fabbri, 2004), hence explaining why they were introduced when this patient had her last exacerbation.

It was thought very likely that the oral candida as well as the metallic taste and hoarse voice could be due to her use of the steroid inhaler. The NP showed to the GP that the patient’s pulmonary function, as demonstrated by the Spirometry taken that day, was no worse than on her previous visit, prior to the Corticosteroid inhaler being started. Since a significant clinical response had not been objectively observed, both the GP and the NP decided

together that the steroids should be discontinued from the point of view of risk v benefit and also evidence-based best practice.

Both the GP and the NP then explained to the patient about the likelihood of the steroid inhaler not offering her that much benefit, instead causing her new symptoms. Her mouth was examined and it was confirmed that the patient had oral thrush, which is a known side effect of using steroid inhalers (Ellepola, et al., 2001).

It was decided to wean off the Corticosteroid inhaler over a couple of weeks before stopping completely, and see how things go. She was also advised by the GP to rinse her mouth thoroughly after using the steroid inhaler, as well as the others. If the situation became worse, with regards her breathing she was advised to call the surgery for an urgent appointment to review her medication. The NP then suggested that the patient was started on an antifungal medication for the Candida albicans infection, such as Fluconazole, a decision that had been made following consideration and reflection, in line with the steps of the prescribing pyramid (National Prescribing Centre, 1999). The NP had already consulted the British National Formulary online (BNF, 2010a) to check for contraindications. The patient had none and also there were no history of liver problems or cardiac arrhythmia where caution should be exercised. The decision was made to commence treatment using a course of oral Fluconazole. The patient was advised about this, and also she was told of the possible side effects such as headache, dizziness, nausea, vomiting, abdominal pain, diarrhoea and the small possibility of liver problems (BNF, 2010a). She understood the

information given and found the decision acceptable and so agreed to commence treatment, and to report any side effects that she noticed.

With regards the patient's depression this was assessed by the GP, after taking a psychiatric history and risk assessment. Both the patient and GP together decided to try a short course of antidepressant medication, which would be kept under close review. She was also encouraged to pursue social service channels with regards to disability living allowance if she was finding it difficult to care for her husband, especially because she was also infirm. The NP provided her with relevant paperwork for local social services and offered to make some enquiries on her behalf to arrange a home assessment. Before the patient left the room, both the GP and the nurse reinforced the importance of smoking cessation on her COPD and the possibility of nicotine replacement. The patient smiled and said she will " give it some thought". Influenza vaccination was also mentioned as a reminder for later in the year. A follow up telephone consultation had been arranged for two-weeks time with the NP. The notes were then completed by both the GP and nurse with regards this part of the consultation.

Two weeks the telephone consultation took place and the patient reported that she felt much better about her quality of life, her oral symptoms were " almost back to normal" and since taking the antidepressants, she had noticed a higher ability to perform day to day activities, and overall she seemed to have a more positive and bright outlook on life. The patient mentioned that she had also finally decided to stop smoking and wanted assistance with this in the form of nicotine patches that the nurse had previously mentioned. The NP arranged for the patient to attend a smoking

cessation clinic, during which she made a mental note to apply the prescribing pyramid to this particular issue of nicotine replacement, and offered her congratulations on the patient's progress. A further review appointment was also made with the GP to monitor the antidepressant treatment.

Discussion

This case illustrates the role of the COPD NP in primary care, and discusses prescribing issues. The nurse had taken a complete history and identified several medical, psychosocial issues and prescribing issues and taken appropriate action. From a medical and functional viewpoint, the examination and spirometry showed the patient had stable, moderate COPD, however holistic assessment revealed that she was taking steroid inhalers that were ineffective in her condition and were also causing her to develop an oral thrush infection. The NP also identified that the patient was depressed and there were social problems at home, caused by the patient's husband being unwell.

The COPD NP correctly identified several issues that needed referral to her GP colleague, and she had worked through a prescribing pyramid to identify that both the steroid inhaler may not be needed anymore, and that the patient would benefit from using an antifungal medication for her thrush.

The prescribing pyramid

The prescribing pyramid (National Prescribing Centre, 1999) is a stepwise approach that has involves seven stages (1-7), and each stage should be considered carefully before climbing to the next:

Consider the patient.

Which strategy should be used?

Consider a choice of product

Negotiate a contract

Review the patient

Record keeping

Reflection

With regard the oral thrush infection, the patient had a full history taken and clinical examination. A holistic viewpoint that took into account the fact that the patient was experiencing unpleasant side effects led the nurse to conclude that GP referral was necessary to confirm the diagnosis and also to tackle the concurrent issue of the steroid inhalers and depression. When considering step four, the NP had reviewed the British National Formulary online (BNF, 2010a) and had decided that Fluconazole was the most effective product for this patient as the patient also had a dry mouth because of her oxygen therapy. Nystatin, another antifungal can be used for oral thrush, but it is less suitable for patients who have dry mouths (BNF, 2010b). The patient also had no contra-indications to Fluconazole, and she was not taking and other drugs that had known drug-drug interactions with this new agent. The

patient was informed of all the possible side effects in a form that she could understand.

This patient had a central role in the decision making process in this consultation in line with stage four of the prescribing pyramid (National Prescribing Centre, 1999). Effective communication skills are an important part of good nursing practice, as originally outlined by the UKCC in 1996 (UKCC, 1996). In the context of nurse prescribing, this includes explaining what the prescription in for; how to take the medication; how long it takes to work and what the possible side effects may be. The nurse also referred to the BNF as reference when making this decision, which is an example of good, evidence-based reflective practice.

In accordance with step five, a review of the patient was organised to establish whether the treatment was effective, safe and acceptable. The patient was also advised to make contact if there were any problems, which is in line with guidance (National Prescribing Centre, 1999). For step six, the nurse practitioner made detailed notes in the medical records immediately after the consultation as per recommendations by the NMC (2009).

The NP reflected on her own practice in this situation and asked the GP to give her constructive feedback, which was useful for improving her own learning and practice. Her need for continuing professional development was acknowledged in the original planning of the service within that practice and as a specialist member of the team, having a good working relationship with all the GPs she had the clinical support to hand and was able to obtain medical advice, supervision and guidance when required. The department

also had regular visits from pharmaceutical companies and teaching on local formulary practices. The NP's own educational programme included critical appraisal training to enable her to be aware of the influences on prescribing.

Conclusion

Nurse-led COPD primary care assessment services where specialist NPs are responsible for performing assessment, investigation and are able to act as liaison officers for patients are becoming more widely implemented in the UK as an integrated medical-social and holistic approach to COPD management. Such nurses prescribe full treatment packages for patients and provide them with a point of contact for specialist advice should the patients have an exacerbation at home, as well as forming the link to the tertiary respiratory units should the need arise. Keeping the majority of COPD care in the community should offer better patient centred care as well as cost savings for the NHS. NPs have a crucial role in the management of COPD, and must be aware of prescribing issues reflective learning to give their patients the best possible care.