SYMPTOMS AND SIGNS OF CARDIAC ARRHYTHMIAS

KEY POINTS:

1. Risk assessment algorithms are needed for assessment of patients with symptoms of arrhythmias in primary care.
2. A minimum diagnostic set should be proposed for GP's, backup up by computer databases.
3. A multitude of different symptoms and many different signs indicate the possibility of a cardiac rhythm problem.
4. However, many patients presenting with symptoms suggestive of a cardiac rhythm abnormality will have no arrhythmia, no important heart disease and simply require reassurance.
5. One of the greatest tasks we have is to design assessment algorithms that identify those in need of further assessment
6. There is a requirement for clear referral pathways.
7. Follow-up arrangements and shared care pathways need to be formalised and agreed.
8. Two specific and important areas in primary care are identified which present special problems – falls in the elderly and blackouts in children.
9. Not all the presenting features are immediately suggestive that there is a cardiac problem, so close liaison with other specialities to which patients with cardiac arrhythmia may be referred (eg neurology, general internal medicine) is essential.
10. The establishment of arrhythmia clinics as a joint venture between primary and secondary/tertiary care, but if based in the PCTs could be examined as a method of delivering a better level of assessment and care.
11. Separate blackouts clinics are needed so that other disciplines, (neurology, falls in the elderly), can add their expertise.
12. Patients with arrhythmia presenting to A&E often raise the issue of whether admission should be recommended or not. However, the solutions remain similar, whether admission is recommended or not, and admissions could be spared with better, more rapid access.
13. Improvements in communication between tertiary and other providers are essential if the expertise available at the centre is to be made more widely available.

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PRESENTATION TO PRIMARY CARE

Many symptoms can suggest a heart rhythm abnormality. There are no systematic studies on the frequency of consultations in primary care for patients with cardiac arrhythmias. There is uniform agreement that these are common presentations. There is no one single symptom that is characteristic of an arrhythmia abnormality, and they may present in a variety of ways[1]. Amongst the more common symptoms that present to primary care and suggest a cardiac arrhythmia are the following:

- Palpitations
- Light headedness
- Dizzy/funny do
- Shortness of breath
- Sweating
- TIA
- Collapse/blackout
- Fall
- Seizure

Symptoms that are suggestive of an abnormal heart rhythm may be produced by undue awareness of the normal rhythm of the heart as well as a pathological cardiac rhythm. It is also important to recognise the fact that rhythm problems maybe be entirely without symptoms (asymptomatic).

- When patient present with symptoms of palpitation these need to be interpreted in the light of other factors such as:
- age,
- physical health and other morbidity's,
- past medical history,
- new or recurrent/chronic medical problems
- psychosocial as well as cultural context.

Many patients are good at recognising that symptoms of palpitation are a physiological reaction to effort or stress. Some are not and it is important to realise that the development of symptoms of palpitation, as well as other symptoms suggestive of an abnormal heart rhythm, may be a reflection of some other physical, psychosocial or somatic problem [2,3]. It is important to realise that a many patients presenting to primary care with palpitation do not have a significant cardiac rhythm abnormality, do not require extensive cardiac evaluation but do require reassurance.

Amongst the relatively common symptoms reported by patients are descriptions such as "my heart gives a thud" or "my heart misses a beat". It is not unusual for these symptoms to be noticeable at times of rest, particularly when going off to sleep, or in certain positions (e.g. lying on the left side). Under all these circumstances the critical question is whether these symptoms are within the range of physiological norms. The sensations of the heart "pounding" when under stress or with exertion are often no more than an appropriate physiological response. Many of these patients are well but worried and require reassurance. Others may be at risk if the symptoms are occurring in the setting of important heart disease, which must be looked for. A completely normal ECG is the starting point for ruling out such risk.

It is critical that algorithms are defined that allow accurate identification of those who need further investigations and to identify as early as possible those who need

reassurance and no further investigation. As a minimum for the initial assessment of patients presenting with symptoms that suggest a cardiac rhythm abnormality we would recommend:

- Elicit previous history (e.g. patients may have previously attended A&E for palpitations, may have a previous cardiac history etc).
- Examination (with particular emphasis on cardiac and other systems (e.g. thyroid function).
- Investigations (Full blood count, urea and electrolytes, thyroid function tests, ECG).

It is fundamentally important that ongoing review should be considered as part of the management – the option of using time as a diagnostic tool should be considered to determine whether the symptoms resolve, whether they change and how often they occur. It is essential to be prepared to review and reconsider the initial diagnosis.

PALPITATION (see chapter 6)

Of the symptoms that suggest an arrhythmia, palpitation is the most common[4-6]. It is important to ascertain certain characteristic features that can further define the significance of symptoms of palpitation (these are referred to in other sections –e.g., transient loss of consciousness, Chapter 10). Essential questions involve whether the symptom of palpitation is rapid and this is often most easily elicited by asking the patient to tap out the feeling that the palpitations cause. How rapid does it feel? Is it at a normal rate but more forceful than usual? It is also of importance to determine whether the symptoms of palpitation are regular or irregular. The duration of the attacks should be noted, particularly whether it is sustained for a significant period of time (e.g. several minutes) or whether it lasts for only a few seconds. These are important questions that help to distinguish between the forms of abnormal rhythm that are often sustained and generally require investigation and treatment, and those that are inappropriate sensations of the normal rhythm, or transient abnormalities of cardiac rhythm that can be often be treated by reassurance. Further symptoms that should be elicited are whether the rhythm abnormality starts and stops abruptly, the circumstances under which the symptoms occur, and whether they are associated with other symptoms (eg breathlessness, chest pain, dizziness, loss of consciousness etc).

Symptoms of palpitations and an arrhythmia may be found in those presenting with depression and/or anxiety. As already mentioned these are common, and suggested by a past history of anxiety or depression and a cluster of other symptoms. However, it should be remembered that anti-depressant drugs are capable of causing arrhythmias.

There are several other symptoms that may suggest the presents of a cardiac rhythm problem and which may be difficult to interpret. Amongst these are what can be referred to as “funny do’s”. There is usually a component of light-headedness or dizziness or a feeling of general un-wellness. The cause of such symptoms is not always obviously cardiac – other pathologies involving ENT, thyroid disease and psychological problems can cause these symptoms, as can the side effects of medications and viral illness.

BLACKOUTS (see chapter 10)

Patients with collapse/syncope can present to primary care. This is considered in a further section, but it is our recommendation that unless there are very clear characteristics that suggest a vasovagal attack patients presenting with collapse/syncope must be referred for specialist investigation.

It is our recommendation that referral pathways between primary and secondary/tertiary specialist cardiac services for patients with arrhythmias are clarified. In many instances referral pathways are unclear. Referral options often depend upon local and or anecdotal knowledge – booking centres to help direct referrals to the most appropriate clinic or specialist seem to be of benefit. Clarity of management/referral options when patients have previously been seen and then referred back to primary care when no significant abnormality has been identified would be helpful. Clarity in all these issues would do much to redress what is often perceived as a referral "lottery".

FALLS

Two further problems represent particularly difficult areas in primary care. Elderly people who have a fall is a common problem [7,8]. This is a hugely misunderstood area with a lack of a framework for risk assessment and investigation of the causes of falls in the elderly. It is our feeling that there is a lack of understanding and appreciation of the significance of a fall, and a lack of appreciation of the frequency with which retrograde amnesia is associated with a cardiac cause. The patient often simply says "I found myself on the floor" with no prodromal symptoms to help identify the most likely cause. Several centres have established "falls clinic" and there is ample data bearing testimony to the value of what is a frequent problem.

We are concerned that Guidelines for Arrhythmias, Epilepsy and Falls are being developed separately, and should be developed jointly, since in there is a huge overlap, and this leads to waste and misdiagnoses.

CHILDREN (see chapter 27)

The problem of children presenting to primary care with symptoms possibly suggesting a heart rhythm abnormality represents another specific difficulty.[9] There is a low level of confidence and knowledge amongst GP's in this area. There is clearly a low threshold for early referral to paediatricians and children appear to be kept under review for longer by paediatricians with a tendency not to refer back to the GP. This all adds to the low level of knowledge amongst GP's and lack of feed back. It appears that there is also a relatively common tendency to diagnose seizures as a cause of collapse and a lack of consideration of cardiac rhythm abnormalities as a cause. Although it is accepted that these are relatively unusual problems with relatively little information much of the uncertainties in general practice, would be helped by greater feed back and communication.

There are several models which have been proposed for assessing patients with suspected arrhythmia who do not require urgent referral by GP/self referral to A&E. Various models of arrhythmia clinic have been proposed, all based on secondary or tertiary centres – the Rapid Access Arrhythmia Clinic model follows the concept of the

chest pain assessment units and are general; syncope/falls clinics and specialist arrhythmia clinics (e.g. AF Clinics) subserve more specific clinical problems where either a symptom is investigated or the diagnosis has already been made.

INVOLVING PRIMARY CARE TRUSTS (PCT'S)

We would propose that a model be examined which establishes an arrhythmia clinic based at PCT level and as a joint initiative between a group of primary practices and a secondary/tertiary centre with a special interest in cardiac arrhythmias. This envisages implementation of protocols for assessment of patients and the use of appropriate investigations as an out-patient which would be performed in cardiac clinics based in the PCTs and could use GPs with special interest. This would provide more local services for patients, could devolve many OP tests to the local primary care area (thereby freeing up resources at the secondary/tertiary centre) and could be examined in a prospective study as a method for reducing patient referral to specialist clinics.

GPS WITH A SPECIAL INTEREST (GPSIs)

There is a lot of potential for increasing the arrhythmia workforce through recruitment and training of GPSIs in arrhythmia care.

PRESENTATION TO SECONDARY CARE

Symptoms:

Patients presenting with symptoms and signs of arrhythmia are derived from a variety of sources. Patients may be referred from primary care or other speciality within the hospital with either symptoms of palpitation or other symptoms, which suggest a cardiac rhythm abnormality (e.g. dizziness, syncope etc.). They may also be referred from these sources with a documented rhythm abnormality. The reasons for referral with unexplained symptoms are that the referring healthcare professionals may not be confident to reassure the patient, investigations may not be available on which to assess risk or that tests may have been undertaken and need more expert interpretation. Underpinning these aspects is a fear of litigation if the advice is proven to be incorrect. Amongst the specific rhythm abnormalities that may have been documented, and for which further advice sought in secondary care, atrial fibrillation is probably the most frequently encountered, and questions arise on whether the patient should be anticoagulated and whether cardioversion should be undertaken as well as the role of using antiarrhythmic medication. The patient with ectopic beats is frequent reason for referral. The patient with frequent ectopic beats may be very symptomatic. Uncertainty on when, or if ever, patients with ectopics should be treated remains. Patients with a slow heart rhythm (bradycardia) with or without symptoms remain a further frequent source of referral, and clarification of the perimeters for dealing with slow heart rhythms is required.

Investigation:

When in-patients are referred in secondary care from other specialists' services, there is usually a documented arrhythmia. Whether sustained or non-sustained the predominant issues are one of aetiology and therefore prognostic significance and devising appropriate management strategies. This requires close collaboration between secondary tertiary service provision.

There are a number of aspects of service provision that secondary care can perform which are not easily accessed in primary care. These include more advanced tests such as event recorders and implantation of reveal devices and access to more comprehensive and experienced cardiac advice. Under current circumstances secondary care retains an important role as a gatekeeper for tertiary care.

It is probable that more patients could be seen and assess in primary care than our currently dealt with. With appropriate algorithms for assessment the probability exist of being able to reassure many more patients who have very low risk such as those with a normal heart and no documented arrhythmia or those with a normal heart and simply isolated ectopic beats. In addition it seems likely that primary care could take an increased role in the management of atrial fibrillation short of DC cardioversion and ablation, and also increasingly manage patient stabilised on antiarrhythmic drugs.

What do we need?

- Clear cut protocols to guide which investigations are appropriate.
- Easier access to means of estimating risk.

Presentation to the Accident and Emergency Department:

The population of patients seen predominantly in accident and emergency department is different to that seen either with primary or in secondary/tertiary care. The nature of these cases is that there have acute presentations either overtly during an arrhythmia or subsequent to significant symptoms such as syncope, seizure, dizziness or falls. There is also an increased tendency for adverse features to be part of the presentation such as chest pain, low blood pressure or the signs of heart failure. The frequency with which patients with arrhythmia attend A&E departments in difficult to establish – amongst the departments in Southwest London it is estimated that cases of atrial fibrillation are seen on a daily basis, paroxysmal SVT weekly and the other sustained arrhythmias such as atrial flutter, heart block and ventricular tachycardia less frequently.

Presentation with syncope is a relatively frequent occurrence and in one study represents 3% of emergency department visits[10]. Well-developed strategies are available for the investigation of syncope as well as the acute management of arrhythmias such as SVT, atrial fibrillation, atrial flutter etc[11]. There is a requirement for widespread use of these management pathways, use of clinical decision units to ensure their application, a greater number of senior doctors to supervise these management's and increase links between A&E units and cardiac departments. Important amongst the developments required are implementation of care plans for known patient, the clarification of guide lines for management of common arrhythmias and referral criteria for such cases and possibly the increased use of rapid access

arrhythmia clinics. Children again represent a special issue where the availability of clear guidelines is required.

PRESENTATION TO TERTIARY CARE

Within the specific limits of assessing the symptoms and signs of cardiac arrhythmia the role of tertiary care is as a support to primary and secondary care, and A&E departments. This encompasses diagnosis (or confirmation of diagnosis), performance of investigations that cannot be undertaken elsewhere, and instigation and supervision of treatment and follow-up. Development of agreed protocols for follow-up is required so that increased numbers of patients can be followed in primary or secondary care. The agreed development of clear referral pathways are required together with the increased use of specialist clinics such as rapid access arrhythmia clinics, syncope clinics etc. Mechanisms to support these roles to make the expertise that exists at tertiary levels available more widely requires innovative practices in communication, particularly in data transfer and telemedicine.

Within the tertiary centre collaboration will continue to be required between those providing an arrhythmia service and other cardiac departments such as CCU, cardiac surgical firms (including ICU), specialist cardiac services (e.g., CAD, cardiomyopathy, heart failure, Grown Up Congenital Heart Disease (GUCH), paediatric cardiology) and other internal medicine departments.

We would propose the development of a risk assessment algorithm for use in all these areas (it would have less applicability to A&E but still of potential value). The use of such an assessment should be the basis of prospective evaluation.

LAY SUMMARY

Patients will seek medical advice with a variety of symptoms, and sometimes, signs that suggest or indicate the presence of a disturbance of heart rhythm.

Patients may also be discovered coincidently to have an abnormality of heart rhythm when seeking medical attention for other reasons.

There are many subjects who have typical symptoms of an awareness of the heart rhythm who require no other action than reassurance – some will require investigation and various levels of treatment.

There is a recognised requirement across the various levels of healthcare delivery (primary, district general hospital and tertiary care) of the need for more uniformity in the assessment of patients who fall into these categories, and the development of methods that assess which patients can be reassured without the need for many time-consuming and complex investigations and those that are at some risk and require more detailed investigation.

Such uniformity will help eradicate inequity of access.

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