Syncope Diagnosis, Treatment and Management

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James Frith is a consultant physician and geriatrician in Newcastle, England. He is also a researcher at the Newcastle University. His academic interests focus on orthostatic hypotension, in particular, the non-drug treatments of orthostatic hypotension that significantly overlap with falls and syncope. HealthManagement.org spoke to Dr Frith on the importance of accurate syncope diagnosis and effective treatment and management strategies for this condition.

Key Points

- Syncope is a transient loss of consciousness caused by a reduction in blood flow to the brain.
- Anybody could be affected by syncope - roughly 40% of the population will have syncope at some point in their life.
- Finding the cause of syncope can be quite challenging as an attack of syncope could be a year between events.
- The European Society of Cardiology Guidelines for the diagnosis and management of syncope is very comprehensive and useful for clinicians.
- Simple treatments are the best. However, if simple things don't work, it is time to refer to a specialist; ideally, a syncope unit, where the guidelines can be followed, and the diagnosis is reached much more quickly.

Why is syncope an important topic? How has awareness of syncope changed over the past ten years?

Syncope is a transient loss of consciousness, and the word transient is important here. The loss of consciousness always recovers spontaneously. It's caused by a reduction in blood flow to the brain, and that can either be caused by a problem with the blood leaving the heart or a problem with the blood pressure. Typically, there is a sudden profound drop in blood pressure. That means not enough blood gets to the brain, and there's a loss of consciousness.

There are lots of different reasons why syncope is important. It's important to the individual who experiences syncope. They have a reduced quality of life – the quality of life of people with syncope is comparable to those with rheumatoid arthritis or moderate depression. Syncope can also result in serious injuries. A large proportion of people will have a road traffic accident if they have syncope at the wheel. They can also break bones when they lose consciousness and collapse to the ground.

There are more wide-reaching reasons why syncope is important. It's so common that significant resources are needed within healthcare systems to investigate and treat syncope. Hence, it is a costly condition for healthcare systems. But the other wider implication is that it affects people's ability to drive and sometimes their ability to work. That's important for wider societal reasons.

From my point of view, the biggest change we've seen in the last 10 to 20 years has been the use of cardiac monitoring, specifically in the area of falls. Older people present to the hospital or primary care as having a fall when in fact, they've had syncope. In the last 10 to 20 years, there's been increasing amounts of research showing that problems with the heart or heart rhythm i.e., arrhythmias contribute to a large number of unexplained falls, particularly in older people who're experiencing syncope.

What does a typical syncope patient look like?

Syncope is so common that anybody could be affected by it. Roughly 40% of the population will have syncope at some point in their life. There is no one typical syncope patient. However, there are two main groups. The first group is the young adult, roughly from the age of around 18 to 23. Young people have very elastic blood vessels, so their blood pressure can drop very low. As a result, they are more prone to fainting episodes,

which is extremely common in this age group. Over time, as we age, the incidence of syncope decreases, but above the age of 60, the incidence of syncope rapidly increases again. It is much more common in the older generation when it is more complicated because they are already on several medicines and suffer from other conditions. Therefore, the older generation tends to have more worrying causes of syncope.

unless the cause is apparent initially. The clinician will take a thorough history from the patient to try and determine what happened. In most cases, history will give us the answer. If the answer isn't clear, there will be a need to do cardiac and blood pressure tests. If the answer still isn't clear, it can be a very lengthy process. For example, one of the tests that might be used in syncope is a device that sits under the skin and monitors the heart's rhythm. If people have one of those devices, the average length of time to reach a diagnosis is almost two years. Hence, it is a lengthy process to reach a diagnosis.

The single most important thing for the diagnosis is the history or the story of the event. That usually gives us the most clues

What challenges does syncope present for healthcare systems?

One of the biggest challenges is that syncope can present in different areas in the hospital or primary care. Someone who needs to see a specialist with syncope may be referred to neurology, cardiology, or geriatric medicine. Sometimes they might be referred to ENT for dizziness that isn't syncope. Hence, patients can end up seeing multiple specialists. Hospitals need to have a syncope unit with people specialising in syncope. That's one of the challenges for healthcare systems.

What are the challenges in diagnosing syncope? What issues face syncope patients getting diagnosed? What are the issues facing syncope patients after the diagnosis?

The challenge for the specialists trying to find the cause of syncope is that typically people will have normal physiology between their attacks of syncope. Finding the cause can be quite challenging because, in an ideal world, it would be useful to know the blood pressure and the heart rate during an attack of syncope. But an attack of syncope could be a year between events, and that's the challenge for clinicians.

In young people, the symptoms tend to be light-headedness, dizziness, nausea and weakness. People might notice that they look very pale and sweaty before collapsing to the ground and losing consciousness. That would be in a typical episode of syncope related to the commonest cause, vasovagal syncope, which is syncope or fainting from low blood pressure. Sometimes people don't get any warning before they lose consciousness, which might make us think there's something cardiac behind the syncope. Also, older people are much more likely to forget any symptoms before they collapse and lose consciousness. That is why older people sometimes present with falls rather than syncope. There are also differences in the recovery period. Younger people recover much more rapidly, whereas older people might feel washed out and tired for longer periods afterwards. Older people are more likely to experience incontinence if they have a syncope attack.

It is important to identify the cause of syncope. When someone presents to a clinician with syncope, they undergo several tests

One of the other difficulties people face is driving restrictions with syncope (different in different countries). In the U.K., for example, some people might have to stop driving for a year. People may face occupational issues and childcare issues; some may develop a fear of having syncope, particularly if it's unpredictable, and that can affect their quality of life and confidence to leave the house.

What diagnostic tools are required or do you consider important for diagnosis?

The single most important thing for the diagnosis is the history or the story of the event. That usually gives us the most clues. Also, it's useful to have a witness to describe the patient's appearance, as that can give us clues. It's useful to have that information as close to the event as possible so people can recall what happened. After that, a 12 lead ECG is useful because it helps us understand what risk the patient might be of having a serious cause of syncope or a less worrying cause of syncope. Alongside an ECG, there is a lying blood pressure and standing blood pressure to see if there are any problems with blood pressure control. There are more specialised tests, such as the tilt test, where we try to make people faint or force them to have a syncope episode and specialised cardiac tests where we monitor the heart for longer periods to catch an episode of syncope.

Are there international standards for assessing syncope? Could you specify the Newcastle protocol for syncope assessment? What is the difference compared to other protocols?

The international standards that we use in Newcastle are the European Society of Cardiology Guidelines for the diagnosis and management of syncope. These are very comprehensive guidelines that are useful for different clinicians, which range from the start of the patient journey in the acute situation in A&E and the emergency room through to the people who are working in syncope units to advise on which tests should be

used and not used and the treatment guidelines.

There are very few differences between the Newcastle Protocol and the European Society of Cardiology guidelines. The main difference is that the Newcastle Protocol is more pragmatic and tries to give useful advice to clinicians on what they can do and use in their clinic.

Where can a patient turn to or go when he has the problem of fainting?

The most important thing is to be safe. Patients who feel they're about to faint or lose consciousness need to move somewhere safe. Most people will move to a seated position, ideally with the head between the knees, or lie on the floor if it's safe. They need to pull over and stop if they're in a car. If they are near water or any other dangerous environment, they should try and move away and lie down. It's not always easy to lie down where a patient is. In such circumstances, there are simple measures which might buy a bit of extra time to move away somewhere safe. This includes squeezing muscles in the body to temporarily increase the blood pressure or pulling the hands apart which will temporarily increase the blood pressure so that someone can move somewhere safe to lie down.

What are the treatment options when syncope is diagnosed?

The commonest cause of syncope is fainting from low blood pressure. Simple treatments are the best. The first thing is to avoid triggers. Heat is a very important trigger for causing low blood pressure and syncope. People should be advised to avoid prolonged standing in the heat or unwrap and remove heavy layers of clothing. Other triggers might be alcohol, which can lower blood pressure; drugs such as cannabis and large meals can also trigger fainting. Some people may have specific triggers, such as the sight of blood. Then there are some very specific triggers which we call situational syncope. People should try and avoid these where they can. Another simple advice is to avoid dehydration. Water is very important in the management of syncope. Young people might consider increasing their salt intake to help increase blood pressure. An important study published in the last few years was about the manoeuvre of using the muscles in our body to temporarily increase blood pressure (van Dijk et al. 2006). It is an effective and proven treatment to abort an attack of syncope or fainting.

What message would you pass on to syncope patients?

Simple things work. Unfortunately, simple things are not always easy to stick to. For example, we need to avoid dehydration but drinking lots of water can be difficult, especially for busy people. Some people will find it embarrassing to lie down somewhere to avoid syncope and might not do that. In the older age group, people might not remember to do the simple measures, but they are the most important, and they work. There are important messages for clinicians as well. In recent years, a VD stop study (Solari et al. 2017) showed that reducing medications lowered blood pressure. If we reduce them, we can reduce the number of syncope events people have without increasing the risk of cardiac or cerebrovascular events. Some other studies have also been published in the last few years evaluating drugs to prevent syncope. One was fludrocortisone and another was midodrine (Sheldon et al. 2016; Sheldon et al. 2021). In very select patient groups, these drugs can be useful. My message to patients and clinicians is that simple lifestyle measures are the most important.

If you were a syncope patient, what would you want to tell other patients suffering from fainting?

I would tell them to drink plenty of water. If they are young, I would tell them to eat more salt. I would also have a very positive outlook for young people because as they get older, their syncope should start to reduce naturally. For the older generation, I would start to look at other things, such as protecting their bones. I would tell them to have a diet and a lifestyle that would be healthy for the bones to help reduce any fractures. I would also stress the importance of exercise, which is good for blood pressure control and bones.

What would you like to tell your colleagues in other departments who might be confronted with fainting patients?

Syncope is so common that just about every clinician will come across it at some point. The important message for people who see the acute side of syncope, usually in the emergency room or primary care, is that when they see the patient, they should do a risk assessment to determine whether the cause of syncope is high-risk. Could it be cardiac syncope? Could there be something wrong with the heart that needs treatment urgently? On the other end of the spectrum, the patient can be reassured and given simple advice if it's low-risk syncope. For other clinicians who might be seeing syncope, I would say if simple things don't work, it is time to refer to a specialist; ideally a syncope unit, where the guidelines can be followed, and the diagnosis is reached much more quickly.

What have been essential achievements in syncope assessment over the past 10-20 years?

The link between falls and syncope is incredibly important, and much work has been done on that in the last 20 years. The management of people who present with falls has changed due to this, and guidelines now very strongly recommend that when people present with a fall, they must be assessed for cardiovascular reasons for why they're falling, which is syncope.

What new innovations do you expect for syncope assessment and management in the next five years?

One of the problems is that people have normal physiology between the attacks of syncope. We need more non-invasive ways of monitoring blood pressure and heart rhythms remotely so people can be monitored at home. There has been progress in recent years. As I mentioned earlier, there is a device that is implanted underneath the skin which can monitor the heart rhythm. There are now devices available in

the form of stickers which sit on the skin and monitor the heart for prolonged periods. I expect to see more development of those kinds of devices. One of the things we've never had is prolonged blood pressure monitoring. Blood pressure is quite difficult to monitor, especially remotely. The equipment used is quite bulky, but recent advances have seen devices that can be stuck onto the skin to monitor blood pressure. Those offer real potential in the future.

With recent advances in TeleHealth and IoT, what role do you see for home care and remote monitoring for syncope management?

Telecare has been around for a while but isn't used very often. I don't know if that's because it's expensive. I'm also not sure whether it's because the biggest healthcare users in Western countries are older people, but remote monitoring and telehealth trends are all technology, and technology isn't always designed to work with older people. Moving forward, we must ensure that such technology is easy to use, acceptable, cheap and accessible for older people. From a clinician's point of view, we need to ensure that telemonitoring transmits important results without many erroneous results. Otherwise, there simply isn't enough time to look at all the information that can come from telemonitoring. We need to make it more pragmatic and user-friendly.

One of the best examples I've seen of telecare, more in the field of falls and syncope, is a simple device that is plugged into a socket, and then a device such as a kettle is plugged into that device so that when someone uses the kettle, a text message is sent to someone else, for example, a family member. Hence, they would know that their parent or grandparent is up and making a cup of tea. If they don't get a text message by e.g. 10:00 in the morning, they know something is wrong. That's one of the best devices that I've come across.

What are your desires for the future regarding syncope assessment?

I would love some sort of continuous blood pressure monitor that people could wear during their daily lives and that could measure blood pressure during a syncope attack. Such a device could help reduce the number of unexplained syncope episodes we see. ■

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