The impact of meticillin-resistant Staphylococcus aureus on patients with advanced cancer and their family members: A qualitative study

Aoife Gleeson¹, Philip Larkin² and Niamh O'Sullivan³

Abstract

Background: Little is known about the impact of meticillin-resistant Staphylococcus aureus on patients with advanced cancer, such as its impact on the quality of life of this vulnerable group. To date, research on meticillin-resistant Staphylococcus aureus in the palliative care setting has had a quantitative focus.

Aim: The purpose of this study was to explore the impact of a meticillin-resistant Staphylococcus aureus diagnosis on patients and their carers.

Design: This article reports upon a qualitative interview study of nine patients with advanced cancer and meticillin-resistant Staphylococcus aureus and nine family members (n = 18). Framework analysis was used to analyse the data.

Setting/participants: Patients and family members of patients with advanced cancer either admitted to the specialist palliative care unit or receiving palliative care in the hospital setting, who had a laboratory confirmed diagnosis of meticillin-resistant Staphylococcus aureus colonisation, were considered for inclusion in the study.

Results: Four themes were identified using framework analysis: reactions to receiving a meticillin-resistant Staphylococcus aureus diagnosis, the need for effective communication of the meticillin-resistant Staphylococcus aureus diagnosis, the enigmatic nature of meticillin-resistant Staphylococcus aureus, and lessons to guide the future care of meticillin-resistant Staphylococcus aureus patients.

Conclusion: This article indicates that meticillin-resistant Staphylococcus aureus can have a significant impact on advanced cancer patients and their families. This impact may be underestimated, but early and careful face-to-face explanation about meticillin-resistant Staphylococcus aureus and its implications can help patients and their families to cope better with it. These findings should be considered when developing policy relating to meticillin-resistant Staphylococcus aureus management and infection control in specialist palliative care settings.

Keywords
Palliative care, meticillin-resistant Staphylococcus aureus, hospices, neoplasms, qualitative research, interview

What is already known about the topic?

1. Prevalence rates of meticillin-resistant Staphylococcus aureus (MRSA) colonisation of 4%–8.7% in palliative care settings reported in three previous studies.
2. Most hospices and palliative care units in southern England and Germany have MRSA management protocols, but palliative care staff often believe that MRSA management has no place in palliative care and that MRSA management negatively impacts quality of life.
3. Little is known about the psychosocial impact of MRSA on patients with advanced cancer and their family members.
What this paper adds?

1. This study presents four themes relating to the impact of MRSA on patients with advanced cancer and their family members who have been cared for in the hospice or hospital setting.
2. This study suggests that MRSA can have a significant impact on patients with advanced cancer.
3. The findings of this study suggest that careful early face-to-face explanation about an MRSA diagnosis and its implications may help patients with advanced cancer and their families to cope better with it.

Implications for practice, theory or policy

1. The findings in this study should be considered when developing policy for the management of MRSA in specialist palliative care settings.
2. The findings in this study suggest that it may be beneficial for MRSA management policy in specialist palliative care settings to focus on early and simple communication of the MRSA diagnosis.

Introduction

Meticillin-resistant Staphylococcus aureus (MRSA) is the most commonly identified antibiotic-resistant pathogen in hospitals in many parts of the world, and while much is known about the clinical impact of MRSA, limited attention is given to the psychosocial impact of MRSA on patients with advanced cancer. While advances have been made in controlling the spread of resistant bacteria, the World Health Organization recently highlighted that antibacterial resistance has reached alarming levels in many parts of the world and concluded that ‘A post-antibiotic era – in which common infections and minor injuries can kill – is a very real possibility for the 21st century’. The European Antimicrobial Resistance Surveillance Network (EARS-Net) collects data relating to MRSA bloodstream infections from European countries and has seen a decrease in the percentage of MRSA in bloodstream infections in a number of countries over the past few years Reference 3. However, as MRSA continues to account for more than 25% of bloodstream infections in 7 of 29 reporting European countries included in the EARS-Net, it is understandable that MRSA has received considerable media attention over the past two decades. Media coverage has in turn shaped public awareness and perception. The majority of this coverage has been negative, with the media citing MRSA as a potentially ‘lethal superbug’ which poses a ‘major threat to public health’ and attributing blame for the spread of MRSA to poor hygiene in hospitals. Such coverage may add to the distress of patients awaiting hospital admission or hospital treatment. As it is known that patients with advanced cancer often experience existential distress and psychological morbidity, it is important to consider whether being diagnosed with MRSA or being treated for MRSA (including the use of barrier nursing or source isolation) may further add to this distress or have a negative effect on the quality of life of these patients.

Until now, studies focusing on MRSA in patients with advanced cancer and/or palliative care needs have predominantly had a quantitative focus. Two previous studies focusing on the psychological impact of MRSA on hospitalised patients included patients with a cancer diagnosis, but to date no study has specifically investigated the psychological impact of receiving a diagnosis of MRSA or of MRSA-related treatments on patients with advanced cancer and their family members. However, there is some evidence that isolating patients either colonised or infected with MRSA can have detrimental effects on the psychological wellbeing of patients in general medical settings. As care for patients with advanced cancer invariably focuses on maintaining quality of life, an understanding of the effect of isolation and other MRSA management strategies on such patients is necessary if optimal care is to be achieved. As it is known that family members usually play a crucial role in supporting the physical and psychosocial needs of palliative care patients, it is also important to understand what family members of advanced cancer patients with MRSA understand of MRSA and their perception of the impact it has on their loved one.

Aim

The purpose of this study was to explore the impact of an MRSA diagnosis on patients and their carers.

Methods

Study design

This study used a qualitative approach. The principal investigator had previous experience of caring for advanced cancer patients with a concomitant diagnosis of MRSA and had been struck by the fear and worry that having MRSA had caused them. The theory of psychological stress and coping conceptualises stress as ‘a relationship between a person and the environment, that is appraised by the person as taxing or exceeding his or her..."
resources and as endangering wellbeing’. Advanced cancer patients face many challenges/stresses that necessitate the employment of a variety of coping strategies, for example, receiving an MRSA diagnosis. This concept of coping as a transactional process was used in this study to help in the understanding of the experiences of patients receiving a diagnosis of MRSA who had previously received a cancer diagnosis.

**Setting**

Two settings were included in this study: a 36-bed specialist in-patient palliative care unit and a tertiary referral centre. The 36-bed specialist in-patient palliative care unit consists of two 18-bed wards, each with six single rooms and three 4-bed bays. The tertiary referral centre is a large academic teaching hospital with both a large oncology service and a palliative care consult service. This tertiary referral centre is one of the main sources for admission to the specialist in-patient palliative care unit included in the study.

**Participants**

Patients with advanced cancer and a diagnosis of MRSA admitted to either the acute hospital setting or to the specialist palliative care unit setting and their family members were considered for inclusion. Two additional inclusion criteria were the ability to speak English and a score of <8/28 on the Short Orientation Memory and Concentration Test (SOMCT) for patient participants.

**Sampling**

Purposive sampling was used in order to cover key factors of relevance to the subject matter while ensuring diversity so that the impact of each characteristic could be adequately explored. Not clear how this was operationalised? In order to ensure an adequately heterogeneous and diverse sample, the following characteristics were considered in the sample frame/parent population: patients and family members, hospice and hospital setting, gender and age.

**Recruitment**

Consecutive advanced cancer patients found to have a laboratory confirmed diagnosis of MRSA and/or their family members were approached by the doctors or the palliative care team in the respective setting (hospital or specialist palliative care unit) and provided with an information leaflet about the study. The principal investigator subsequently contacted those who agreed to take part in the study. Written consent was sought from each participant prior to each interview.

**Data collection**

The interviews were conducted by the principal investigator and each interview took place in the participant’s preferred setting (hospital, hospice or home). None of the participants were known to the principal investigator. In-depth interviews using a topic guide were conducted with both patients and family members. For in-depth interviews, a topic guide is used in a similar way to the use of a questionnaire for semi-structured interviews. The topic guide includes all issues to be explored during the interview but does not dictate question style or the order in which issues should be explored. Hence, the topic guide acted as an aide memoire: a tool to enhance the consistency of data collection. The presence of the topic guide helped to ensure that all relevant issues were covered systematically and aided the principle investigator in steering the discussion to cover essential sub-topics. The topic guide in this study (Supplementary Appendix 1) was developed by the principal investigator and its development was guided by the clinical experience of the principal investigator, existing literature on the psychological impact of MRSA on patients and by the theory of psychological stress and coping. In

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**Table 1. Framework analysis.**

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<thead>
<tr>
<th>Core Steps in Framework Analysis</th>
<th>Achieving each step</th>
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<tr>
<td><strong>Familiarisation with the raw data</strong></td>
<td>Reading, re-reading interview transcripts</td>
</tr>
<tr>
<td><strong>Devising a Conceptual Framework/”Index”</strong></td>
<td>Thorough review of data and topic guide to identify important themes and concepts, which were then grouped and sorted.</td>
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<tr>
<td><strong>Labelling/Tagging the data – “Indexing”</strong></td>
<td>“Index” applied to the raw data</td>
</tr>
<tr>
<td><strong>Sorting data by theme/concept</strong></td>
<td>Material gathered in thematic sets using NVIVO 8.</td>
</tr>
<tr>
<td><strong>Summarising/Synthesising the data</strong></td>
<td>All original data summarised in matrix format (Excel)</td>
</tr>
<tr>
<td><strong>Descriptive analysis</strong></td>
<td>Detection, categorisation and classification of themes</td>
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Figure 1. Framework analysis.
developing this guide, consideration was given to the layout so as to ensure its utility value. Opening topic and length were two important considerations. The opening topics were chosen to give optimal opportunity for participants to ease into the interview while providing context for topics to be explored later in the interview. Hence, exploration of personal information was felt to be the most appropriate opening topic. The guide was also kept to two pages in length and contained short headings and descriptions, all separated and clearly demarcated by bullet points and contained a lot of space. This made the guide easier to read in the field and allowed for notes to be taken during the interviews.

Interviews were recorded verbatim using a digital recording device, transcribed and subsequently managed using NVivo 8, a computer-assisted qualitative data analysis software (CAQDAS) package.

**Analysis**

The data were analysed using framework analysis (FA). FA is a form of thematic analysis that is used extensively by applied policy researchers. An overview of the processes involved in FA is presented in Figure 1. The analysis was carried out by the principal investigator and reviewed by a second investigator (co-author, P.L.). Two family member participants agreed to review the transcripts from their interviews for accuracy prior to data analysis and the subsequent categorising of their data.

The first step in FA involved a familiarisation process with the data. One interview from each subgroup was included for this familiarisation process: hospice patient, hospice family member, hospital patient and hospital family member. The research proposal, topic guide and the familiarisation process, a list of ideas was generated by identifying links between ideas/categories and sorting these categories into different levels of generality. This led to the development of a manageable index or conceptual framework, as is presented in Figure 2.

The second step in the analysis was the labelling of the data. The conceptual framework was applied systematically to the entire data resulting in all the raw data being indexed. Indexing enabled concepts being mentioned in particular sections of the data to be identified and shown. This led to the third step in the analysis: summarising of the data. Connections between categories slowly emerged during indexing as, where two or more index categories were repeatedly interspersed, it was evident that there was some interconnection. Repeated review of the indexed data led to index categories being brought together in three thematic sets:

1. Background and coping;
2. Cancer experience;
3. MRSA experience.

**Figure 2. Conceptual framework.**

With close and careful reference to both the original raw data and the three thematic sets, data were summarised in three thematic matrices, using Microsoft Excel datasheets. In this charting process, each column represented an index category and each row represented an interview participant. Data relevant to each index category were summarised and relevant quotes from participants were included as reference numbers. This produced three large spreadsheets which allowed comparison both within each clinical case and between clinical cases. The physical width (cm) within the spreadsheets for each index category was identical for each clinical case. The next step was the development of descriptive accounts. Continued scrutiny of the matrices uncovered specific threads/phenomena within the data and allowed all aspects and dimensions of these phenomena to be identified or detected. This led to a refinement of categories, and subsequently descriptive data were assigned to these categories. These categories were closely scrutinised to look for similarities and links with other categories, hence producing a list of broader categories, as presented in Figure 3. In refining the categories, there were two central foci. These were as follows: the language used by participants to describe phenomena and the substantive content of the participants’ accounts, in terms of both meaning and descriptive coverage.

The resulting descriptive accounts acted as ‘building blocks’ for the final step in the analysis, seeking explanations for phenomena presented and allow the gradual
development of explanations (explanatory accounts). Through the production of descriptive accounts, patterns of association became apparent and slowly, through interrogation of these patterns, explanations for these patterns were sought. Thus, four final explanations or themes were identified and are presented in the ‘Results’ section.

Data saturation was achieved when no new information was forthcoming from the interview respondents.

Results

Out of 22 people approached about the study, 18 agreed to participate (82%). Hence, a total of 18 individual interviews were conducted, 10 with patients and 8 with family members. The average length of interview was 52 min (range = 24–73 min). Participant characteristics are presented in Figure 4.

Four final themes were identified: reactions to receiving an MRSA diagnosis, the need for effective communication of the MRSA diagnosis, the enigmatic nature of MRSA and lessons to guide the future care of MRSA patients.

Theme 1: reactions to receiving an MRSA diagnosis

Many participants reflected on comparable worry that both cancer and an MRSA diagnosis could cause. The language used to describe the reaction to receiving either diagnosis was similar. Receiving the cancer diagnosis elicited feelings of fear and anxiety in patients and many family members, while other participants who had suspected the diagnosis were either more accepting of it or more resigned to the inevitability of death due to the cancer diagnosis. Participants’ reactions to receiving the MRSA diagnosis were surprisingly similar. Many spoke again of shock, devastation and worry and recalled feeling a sense of doom and foreboding when they learned of the MRSA diagnosis. Seven of the patients interviewed initially viewed MRSA as serious and worrying. Many felt it was a threat to their health and some even thought they might die from it. One patient commented,

… anything about MRSA I think we would all agree would be shock, just as bad as cancer in many ways … (HospiceFamily1)

Family members spoke of being taken aback on hearing the diagnosis of MRSA, but some felt that it was a side issue, given the seriousness of their family member’s cancer diagnosis. They also considered the impact of telling their loved one about the diagnosis of MRSA. A brother of a patient spoke of his wish for the diagnosis of MRSA not to be discussed with his brother:

… I don’t think it should be raised anymore with him … He’s got enough to think about. (HospiceFamily2)

Time appeared to play a healing role in relation to the reaction of participants to the diagnosis. Regardless of the level of worry initially held by participants, all concerned participants became less worried about MRSA as time went on. Family members’ shock and worry also waned with time, when they realised that MRSA was not as big a threat as they had initially thought. One head and neck cancer patient who had been diagnosed as having MRSA on at least three separate occasions spoke of her and her family’s attitude to it:

They all take it for granted now the same as I do. They don’t even think about it. It’s secondary, really, as far as they are concerned. And me … And I don’t absorb that information, a lot of other things I do, but with MRSA … partly because it doesn’t worry me anymore. So, I don’t really bother. (HospicePatient1)
Theme 2: the need for effective communication of the MRSA diagnosis

A total of 12 of the participants acknowledged having heard about MRSA before this diagnosis, mostly through media coverage. They felt that the media painted a very negative picture which was particularly evident through the language used by participants:

I thought it was a flesh eating bug, I thought it was going to eat her from the inside out. (HospitalFamily1)

You think it’s like ebola. That it’s going to eat people away. (HospiceFamily3)

Due to this negative media coverage, participants were initially very worried about the diagnosis:

MRSA is one of those kind of scary words being bandied around at the moment, and, I mean, people associate with, kind of like, you’re doomed. (HospiceFamily1)

… if a patient with surgery picks up MRSA he is doomed to die. (HospitalPatient4)

While one family member researched MRSA after hearing about his brother’s diagnosis, all other participants were reliant on the medical and nursing team to raise the topic of MRSA with them and provide them with all necessary clinical information relating to MRSA.

Despite this reliance on the clinical team to provide information, many participants perceived a delay in receiving this information. Two family members in the hospice setting only found out about the MRSA diagnosis when they were asked to take part in this study. For other family members, the first hint of an MRSA diagnosis was through noticing a change in the care given to their loved one. The wife of a hospital patient describes her experience:

… they’re not very forthcoming in what they say and in what they tell you, and that was the second time that he actually had MRSA and they didn’t tell us. They didn’t actually say he’s got MRSA, no, they didn’t say it. It was only when we actually pushed, or asked, or seen the gowns going on that we copped it ourselves, you know, so. (HospitalFamily4)

The impact of perceived delay in receiving the MRSA diagnosis was variable. Some family members reported feeling somewhat surprised that they were not independently informed of their loved one’s MRSA diagnosis, while other participants spoke of the adverse impact the delay had on them, especially worries about passing it onto more vulnerable family members. Some participants reported feeling angry about the perceived delay in receiving the diagnosis. For some, this anger had settled, but three of the participants remained distressed and angry at

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<th>Participant characteristics (n=18)</th>
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<td>Patient’s diagnosis in the case of family member interviews (n=8)</td>
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<td>Time from interview with patient until death of patient, mean ±/ SD, days</td>
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<td>Time of interview with carer until death of patient, mean ±/ SD, days</td>
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the time of interview. The brother of a hospital patient remembered having to seek the MRSA diagnosis from a doctor and the anger that this invoked in his sister:

He wasn’t on for telling us at all, but in the end he sort of …

Well my sister … I’m fairly quiet, but my sister lashed into him. She called him a liar! (HospitalFamily2)

The daughter of a hospital patient who remained angry at the time of the interview explained that the delay in receiving the news impacted her in two main ways: it made it difficult for her to trust or believe the clinical team, and it added an extra emotional burden for her to carry in the face of an already difficult situation, as she explained here:

I don’t know whether I was upset because she had MRSA or because they lied to me and didn’t tell me, and I really don’t know which one I was upset for, like. (HospitalFamily3)

Other participants also reported feeling that information had been held back. Interestingly, all of these participants were in the hospital setting. Although some participants in the hospice setting perceived a delay in receiving the diagnosis, it seems the delay was perceived as shorter and that staff communicated it well.

Regarding the mode of delivery of the MRSA diagnosis, most participants received some verbal information. Six of the participants received an MRSA information leaflet. An additional participant had received an MRSA information leaflet a few years previously when having an operation in the United Kingdom, but not when he was diagnosed as being colonised with MRSA. Those who had received leaflets felt this was useful as an ‘add on’ to adequate verbal information, with one participant indicating that he felt that having leaflets available proved that the health service took the issue seriously. However, another participant felt that the leaflet she got should have been shorter, should have used simpler language and been more concise.

Theme 3: the enigmatic nature of MRSA

With the exception of one patient, all participants in the study seemed to have a good understanding of their (family member’s) cancer diagnosis. A total of 17 of the participants gave a clear outline of the cancer journey and recalled clearly when they heard the diagnosis. Many participants spoke about not being surprised by the diagnosis, accepting the cancer diagnosis, and also reflected on the inevitability of deterioration with cancer. Here, a family member of a hospice patient recalls his brother’s reaction to receiving the cancer diagnosis:

Although, as he said to me, he said if it’s going to happen it’s going to happen and you can’t do anything about it. (HospiceFamily2)

In relation to their understanding of the MRSA diagnosis, many of the participants were less certain. Two patients had almost no knowledge of what MRSA was: one of whom thought MRSA was code for telling you that you had a terminal diagnosis. All other participants admitted having a suboptimal level of knowledge. Most participants knew that it was ‘a bug’ of some sort:

… that it’s a bug. A very bad one, isn’t it? (HospitalPatient4)

Almost all participants knew that there was an association with hygiene, and that hand hygiene was important when someone has MRSA. A hospice patient explained his understanding of hygiene precautions needed for patients with MRSA:

Washing and making sure you, … that you’re clean and that sort of thing, and that your clothes would be clean and that sort of thing. (HospicePatient5)

Prior knowledge of MRSA mostly came from the media and most of this information was perceived as being negative and worrying.

Most participants associated MRSA with the skin and with images of boils and lumps and wounds that would not heal and might lead to your death, and they also associated it with images of creatures that would eat the flesh of a person. One hospital patient who had been treated on three separate occasions for MRSA vividly described her image of MRSA:

Like all them Crawly bugs, fleshing eating bugs. I think of all the creepy bugs I could get that could eat me away. (HospitalPatient1)

The participants who continued to describe such terrifying images of MRSA were the same participants who complained of receiving the least information about MRSA. While other participants felt they had suboptimal MRSA knowledge levels, many of their fears had been dispelled. It was common for participants not to seek information relating to MRSA and as a result many admitted that they had no understanding of it. Even when participants received an information leaflet, they felt they continued to have a suboptimal level of knowledge about MRSA. One of these participants, a hospice patient who had been treated for MRSA on at least three separate occasions, concluded that she was completely ignorant, that she had little or no knowledge of what MRSA was, despite both the explanations and the leaflet:

No, actually, I couldn’t tell you for sure [laughter]. Half a stab at it, would be that it’s a virus of some sort, because it’s treated with antibiotics. Am I right? (HospitalPatient1)

It is possible that this dearth of knowledge could be linked to the initial shock when first informed of their
diagnosis, as many participants recalled that they had not taken in much information about MRSA at that time. Despite the similar shock many recalled when they received the cancer diagnosis, participants had a good understanding of cancer and its implications for them or their family member. It is possible that less time was spent on imparting information about MRSA than on imparting information about cancer, and some participants acknowledged that they would have liked to have had at least one further ‘information session’ on MRSA after receiving the diagnosis. However, others indicated that they did not want to know more. Whatever the reasons for the lack of knowledge, it was clear that for most participants, MRSA remained an elusive, enigmatic and persistently concerning entity:

Like, in the back of my head I am always saying, you know, is this dangerous for us, because we don’t know. We don’t know anything enough about it to know if it’s dangerous for us or not, do you know what I mean? … (HospitalFamily2)

Theme 4: lessons to guide the future care of MRSA patients

Timing of disclosure of the diagnosis. All participants felt that the MRSA diagnosis should be disclosed and many participants thought it was important to tell family members as soon as possible, either separately or at the same time as telling the patient. Participants strongly recommended that the diagnosis be given as soon as possible after the information became available. Two main factors seemed to influence the importance of the need for early disclosure of the MRSA diagnosis, to participants. The first of these was the perceived need to quickly dispel the negative image that the media had painted of MRSA, as indicated by this participant:

my mum’s reaction was classic, in so far as that her, you know, perception of MRSA was that … it was a greater threat to her well being than what she was actually here for … ahh … So, that begs the question, why are people not more informed, or why isn’t the health service not trying to dispel fear. (HospiceFamily1)

The second influencing factor was the need to promote trust and hence improve the patient–doctor relationship, as many participants believed that a delay in giving the diagnosis could be perceived as an attempt to hide something. Those who perceived there had been a delay indicated having less trust in the doctors they met. One participant had experienced both a delay and difficulty in obtaining the diagnosis even when he asked the doctor directly. He explains how this made him feel:

I think when you’re straight with people there’s no problem. But, when you find that there’s a thing going on in secret, your first thing is, what else are they telling us, or what else are they not telling us. (HospitalFamily2)

Disclosure of the diagnosis. In relation to who should impart the diagnosis, participants had mixed recommendations. The majority felt that a doctor should disclose the diagnosis, and if possible by someone known to the patient, that is, a doctor on the team. Some participants felt that it would be helpful to offer further information on MRSA, as they themselves had absorbed very little information at the time of hearing the diagnosis.

It was strongly recommended that the information given should be simple, concise and in layman’s terms. Participants admitted to knowing little about MRSA and many of those who had received information felt it was not pitched at their level and therefore difficult to understand. This was the experience of this participant:

… when that doctor was trying … was saying it to me, like, he was using the big words. Sure they mean nothing to me, do you know what I mean? … that’s nothing to me. At the end of the day that’s just gone over my head. The only piece that I know is MRSA, but when he says anything after that, it’s nothing. If it was explained simpler … (HospitalFamily3)

Feelings on provision of information leaflets were mixed. Predominantly, participants felt that simple verbal information was most valuable but that a short information leaflet could accompany this. Although seven participants had received a leaflet, their knowledge levels on MRSA remained suboptimal and a hospice patient admitted,

I know when I was told I was given a leaflet. I don’t remember a single solitary word of it. (HospicePatient1)

Due to the negative perception that most participants initially had of MRSA, there were mixed feelings on having a general campaign to increase awareness of it. Some felt that a campaign would help to dispel myths and to reduce fear of MRSA, as this participant outlined:

Well, like, the spin doctors have done their worst for it now for the moment, so if they could put it on its head and say like Oh! Well. it Like it’s dealable with, or it’s not as bad as people think it’s going to be or whatever. Yeah, I think that would probably be a good idea. (HospiceFamily3)

Other participants felt that a general information campaign would serve to perpetuate the negative connotations surrounding MRSA and hence recommended speaking quietly about it to people.

Prevention and management of MRSA. In the hospital setting, participants had strong feelings about environmental and hygiene issues. Most recommended that hygiene practice in

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the hospital be improved. Some participants blamed the environment directly, as the source for them or their loved one contracting MRSA. Participants spoke about their perception of poor hygiene practice in the hospital and made many recommendations including wards needing dedicated cleaners, hospitals needing stricter hygiene rules, patients needing to wear hospital clothes and patients not sitting on other patients’ beds. One participant explained,

... if I was to be blunt and honest, I really believe that if they, I think if they cleaned up a lot more. I don’t mean just cleaning as it is, I mean clean up the whole hospital and change the way they do things. (HospitalFamily4)

The majority of participants had strong opinions regarding the appropriateness of the management of MRSA they received. Despite the fact of their co-existing cancer diagnosis, no participant viewed screening for MRSA as a burden. Many participants actually viewed screening as positive, as it could lead to diagnosing something that was treatable:

I think it’s perfectly acceptable. I think it’s a good thing. It’s … I don’t think you can have too much information on a patient … You can treat it. You can do something for him. If you don’t know he’s got these things you will never be able to treat them, and I think it’s fine. (HospiceFamily2)

Discussion

This is the first study to explore the impact of MRSA on both advanced cancer patients and their family members. The themes presented clearly reflect that MRSA can have a significant psychological impact on both patients and family members. This study showed that a supportive caring environment and good communication helped to dispel the fears and worries participants had in relation to having MRSA, even when knowledge levels remained suboptimal.

Previous studies focusing on MRSA in advanced cancer or palliative care settings have focused on clinical aspects such as prevalence and infection rates. Hence, this is the first study to provide insights into the psychological impact of MRSA in this setting. However, there is an increasing body of qualitatively oriented literature focusing on the impact of source isolation for MRSA and on the impact of contact precautions on hospitalised patients.26,27 An interview study with 10 patients isolated due to MRSA infection, which included 2 patients with cancer, found the overall experience of patients to be a negative one. In this study, patients experienced stigmatisation and feelings of fear, anger, frustration and guilt due to being MRSA positive. They also perceived MRSA and isolation as having a negative impact on their relationships and their overall care.15 In another study, focusing on patients with spinal cord injury isolated due to MRSA, isolated patients were significantly more angry and felt that isolation had adversely affected their rehabilitation.13 Participants in this study were not adversely affected by contact precautions (isolation or barrier nursing). However, some of these patients were no longer receiving treatment for MRSA colonisation at the time of interview. It is also unclear whether barrier nursing adversely impacts patients less than source isolation, but it is noteworthy that isolated participants in this study commented on enjoying the peace and privacy isolation gave them. Further research in this area is warranted.

This study highlights the importance of simple and timely communication of the diagnosis of MRSA colonisation or infection to patients and their family members. This information needs to be delivered as early as possible through face-to-face discussion with the patient and their family members, where applicable. This conversation should be held prior to the institution of contact precautions. These recommendations should be considered when developing MRSA policies for use in oncology and specialist palliative care settings or MRSA policies with a remit for advanced cancer or palliative care patients. Consideration should also be given to provision of simple and concise information leaflets to patients and their family members and also to providing follow-up information sessions on MRSA.

The limited number of subjects in this study prevents generalisation of results to the wider advanced cancer population. In keeping with qualitative principles, however, there were sufficient numbers to saturate themes and to address the goals of the study. Comparing the perceived impacts of cancer and MRSA diagnoses was a further limitation of the study. This was used as a crude indicator of how seriously participants viewed MRSA as a threat to their health. Ideally, the findings of this study could have been confirmed or strengthened using a tool such as the Brief Illness Perception Questionnaire in a larger population of advanced cancer patients with MRSA.

Further studies are needed to evaluate the psychiatric impact of MRSA on patients with advanced cancer, using validated measures and carefully matched controls. Further research is also needed to evaluate the clinical impact of MRSA on the advanced cancer population, especially with regard to impact of MRSA on morbidity and mortality.

Conclusion

MRSA can have a significant impact on advanced cancer patients and their families. This impact may be underestimated, but early and careful face-to-face explanation about MRSA may help to minimise the distress experienced. The findings in this study suggest that effective communication about MRSA and its implications are key to helping patients and their families to cope better with it. These findings should be considered when developing policies on MRSA management in palliative care settings, with a
view to helping support patients and their families when dealing with MRSA and minimising the effect of MRSA on their quality of life.

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**Ethical approval**

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