CASE REPORT

Navigating the benefits and burdens of life-saving treatment in severely decompensated cirrhosis: an illustrative, multisourced narrative

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SUMMARY

Severely decompensated cirrhosis presents major challenges in terms of balancing the benefits and burdens of life-extending treatment. Using accounts and interviews with a patient, her mother, consultant hepatologists and a consultant intensivist, this article explores the decision making around a 43-year-old woman with alcoholic liver disease who died after 100 days in a hospital. Particular focus is given to decisions on escalation, recognition of futility, distress associated with therapy and how messages given during end-of-life discussions are processed. Without suggesting that the case is an example of ideal practice, the importance of frequent multidisciplinary discussion, clinical re-evaluation and continuity of care is emphasised.

BACKGROUND

Recognition or acceptance of dying in acute-on-chronic liver failure (ACLF) can be delayed,¹ and opportunities for easing symptoms may be lost while clinical teams maintain a focus on active medical management. It is well recognised that patients with end-stage liver disease are on average younger than other terminally ill patients,² and this undoubtedly contributes to the reluctance to convert to a palliative approach. Poonja *et al*, studying 102 patients who were declined transplant or removed from the transplant list, found that only 11% were referred to palliative care despite having a very significant burden of symptoms.³ Although patients may express opinions regarding the desirability of ongoing treatment, they are often unable to engage in this discussion due to critical illness, encephalopathy or other causes of obtundation. During prolonged admissions that are punctuated by episodes of clinical deterioration and partial recovery, the medical team's own assessment of benefit and burden may change. In the background there are wider ethical and moral issues related to a disease that is often regarded as secondary to life-style 'choice',⁴ or concern regarding resource utilisation.⁵ This article analyses the clinical decisions involved in the management of a 43-year-old female patient, who survived a prolonged admission with ACLF but who subsequently deteriorated and died.

CASE PRESENTATION

The patient presented with features of severe alcoholic hepatitis (bilirubin 95 $\mu\text{mol/L}$, International

Normalised Ratio (INR) 1.9, Maddrey's discriminant function 42, where >32 is regarded as severe) on a background of likely cirrhosis. During an initial 13-day admission, she underwent transjugular biopsy (confirming the hepatological diagnosis), ascitic tap (no infection), endoscopy (barely noticeable varices) and a therapeutic trial of prednisolone. Her jaundice improved and she was discharged on the steroid. Three weeks later, she re-presented with variceal bleeding and spontaneous bacterial peritonitis (*Escherichia coli* isolated). She was admitted to intensive care unit (ICU) and stabilised on multiple organ support (including renal replacement therapy (RRT)). There was a failed extubation on day 4 (reintubated due to encephalopathy and hypoxia), and she was extubated successfully again on day 11.

On day 13, while still on ICU, her condition deteriorated and it was proposed that care should become supportive/palliative. The hepatology consultant advocated for re-escalation (Account 1) in conversation with the intensive care consultant (Account 2). After further improvement, she was moved to the high-dependency unit where she rapidly developed a large right-sided hydrothorax leading to type 1 respiratory failure. A chest drain was inserted, avoiding further mechanical ventilation. There followed a prolonged phase of clinical and biochemical fluctuation with profound jaundice (bilirubin $>400 \mu\text{mol/L}$) and episodes of high-grade encephalopathy with agitation and pronounced distress. She was treated for hospital-acquired pneumonia.

Multiple conversations took place with the patient's mother regarding prognostic uncertainty, the likelihood of death in the event of any further complication, and how to deal with her distress and pain (Account 3). The palliative care team were engaged and advised on this. Tonic-clonic and absence seizures occurred, and these were actively treated. The hydrothorax reaccumulated and a second drain was inserted. Following the removal of the drain, there was significant haemoptysis and rapid onset of encephalopathic coma, at which point an individualised end-of-life (EoL) pathway was instituted. However, there followed a gradual improvement in conscious level, she began to mobilise, and discharge planning commenced. A short bedside interview took place with the patient (Account 4). She returned to her own home with

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Figure 1 Timeline of clinical events and serum bilirubin level. EoL, end-of-life; ICU, intensive care unit; OGD, esophagogastroduodenoscopy; HDU, high dependency unit; MET, medical emergency team; HE, hepatic encephalopathy

minimal support. Two weeks later, she was asked back into hospital for a blood transfusion as haemoglobin had fallen to 7.3 g/dL without evidence of bleeding. She deteriorated quickly and died of progressive liver failure. A month later, her mother agreed to be interviewed over the phone (Account 5). The patient gave permission for an article to be written about her prior to death, and her mother gave written agreement subsequently. A timeline of clinical events is presented in figure 1.

OUTCOME AND FOLLOW-UP

Account 1: hepatologist A

This patient deteriorated on ICU while extubated, and I advocated for re-escalation of care if required. Although this followed 13 days of aggressive treatment, I argued that her admission, itself the first presentation of alcohol-related liver disease (ARLD) requiring ICU, was related to ACLF and that potentially reversible factors (variceal bleeding and sepsis secondary to SBP) were driving her illness. Blood tests in the 24–48 hours prior to her deterioration showed a rise in her white cell count (7.3 to $13.3 \times 10^9/L$) which I viewed as a sign of possible infection and therefore a potential therapeutic opportunity to restart broad spectrum antibiotics. There was no evidence of renal, respiratory or circulatory failure that had been present earlier during her critical care admission, and furthermore she had demonstrated a response to treatment previously. I could not agree with the intensivist's opinion to withhold airway protection should her hepatic encephalopathy compromise her airway, as in my experience hepatic encephalopathy can quickly improve particularly if a reversible cause is identified and treated.

Following discussion, we agreed to restart empirical broad spectrum antibiotics and to proceed to intubation in the event of airway compromise. I conceded that should she develop recurrent three or four organ failures this would be a genuine indicator of lack of response and that we should then consider palliation. Her hepatic encephalopathy peaked at grade 3 and improved after restarting broad-spectrum antibiotics. She did not require reintubation or develop additional organ dysfunction and was stepped down to the ward 6 days later (day 19).

Account 2: intensive care consultant

The 'first presentation' argument in this patient's case was compelling. Few would disagree that, when faced with a life-threatening deterioration in any young patient, the right thing to do is treat aggressively for a period of time, and then re-evaluate. Limiting or withdrawing aspects of treatment is a much more

uncomfortable decision but, as gatekeepers to organ support and all that follows, this is something that ICU doctors have to make, and when we do, it is usually patient focused and on compassionate grounds.

At its worst, ICU treatment prolongs death and could not be further from the peace and dignity that one would hope for at the end of life, and sometimes the kindest decision is not to start at all. At its best, ICU treatment is extremely hard going for both the patient and family, and we justify this burden of treatment for as long as it is outweighed by perceived benefit. The problem is—perception is subjective, and if there is ever disagreement between intensivists and specialists, this is usually its root cause. This patient had survived a period of multiple organ support, but this left her weak and extremely vulnerable. Her physiological trajectory was low, and re-escalation to multiple organ support would have been inevitable following reintubation in anyone with her degree of frailty, no matter how treatable the cause of their deterioration was. However, the hepatology team felt there was still some reversibility, and we agreed on a plan for airway protection, but fortunately this was not required.

Account 3: hepatologist B

The possibility of palliation was discussed during her ICU spell. When she deteriorated to the point at which she required RRT, myself and the ICU consultant had a discussion with her mother outlining the situation. We explained that even if she was started on RRT she may not survive, it would involve further invasive procedures, and if she did not improve with this intervention we would move to a palliative care approach. We asked what her mother felt the patient would want. In the event she improved sufficiently to be stepped down from ICU.

She was started on an EoL pathway by a colleague after she developed an encephalopathic coma well into her second admission (day 62), in the context of unresolving liver failure and a very high jaundice level. The encephalopathy subsequently improved over the course of a weekend and when I did a ward round the following Monday morning she was sat in bed eating breakfast and talking lucidly; but was still very unwell with profound jaundice and renal failure. I had not looked after her over the preceding month, but due to her improved conscious level, and after discussion with the palliative care team, the patient and her mother, I revoked the EoL care pathway and reinstigated treatment with a ceiling of care at ward level with an emphasis on maintaining comfort. In these discussions, I indicated she still might not survive to discharge, but as she was unlikely to die in the following few days the EoL pathway was no longer appropriate. The decision to reverse the EoL care pathway was welcomed by her mother and the patient, but gave a conflicting message when discussions with a different consultant only 3 days earlier had indicated that she was dying and would not survive for more than a few days.

Account 4: interview between hepatologist C and the patient at the bedside 13 days before death, following readmission for anaemia

C: Do you remember much about it (the 3-month hospital stay)?

'I remember bits and bobs, I can't pick out which is real and which isn't...'

'The first time I can remember anything like normal, was when I came back to this ward... I remember being in a lot of pain...'

C: You were quite upset towards the end weren't you?
 'I remember those days yeah, I remember seeing my Mum crying... which made me feel, like... what can I do?'

C: So seeing your Mum upset, did that upset you a lot?
 'I knew my Mum wasn't well... I don't know how I knew that...'

C: Were you happy to have the treatment? Did you ever think 'I wish they would stop' or anything like that?
 'I was all confused, I try and put that part of life behind me basically, try and forget about it. I remember vivid dreams more than anything else... I was covered in blood when I came in apparently...'

C: Are you pleased you went through all that?
 'I'm pleased I pulled through, I'm lucky, I'm very lucky, I realise that my body now has to be treated like a temple. Not a drop, not a drop, it doesn't even interest me...'

Account 5: telephone interview between hepatologist C and the patient's mother 1 month after her daughter's death
 Regarding the discussion and decision to escalate and institute renal support, her mother recalled,

'A doctor took me into a room, said there was no hope now... The choice was up to me, but I know that at the end of the day it was the doctor's choice... I'm not sure if I did the right thing to [agree for her daughter to] go on dialysis...she came round and could speak again, so it was worth it, very, very worth it.'

Regarding her daughter's confused condition on the ward as a source of distress

'The thing I found so hard was that due to the medication she didn't want me there, she told me to go home, no-one else, just me...'

'She couldn't remember saying that later – 'out of all the people you were the one I wanted to be there,' she said...'

When asked about how she felt during the numerous EoL discussions

'The first three times I just couldn't believe it... but later she picked up a bit and when she fell really ill again they said 'You'll have to say goodbye again'... I didn't believe it at all the fourth and fifth times... I didn't shed any tears to be honest, I thought she would make it, she'd bounced back so many times.'

DISCUSSION

Although data abounds regarding prognosis based on laboratory and physiological variables measured at initial presentation, interpretation in individual cases remains difficult.⁶ Recently, the CANONIC study and associated publications developed disease descriptors including ACLF grades 1–3 (defined by the onset of specific extrahepatic organ failures) which have allowed some confidence when counselling patients and relatives with regard to the risk of dying and the potential benefits of intervention.^{7–9} For example, ACLF-2 (decompensation with two non-hepatic organ failures) is associated with 28-day mortality of 32% and 90-day mortality of 55%. The same dataset appeared to suggest that ongoing organ support might be judged futile if there was no improvement in ACLF grade after 7 days of intensive support,¹⁰ though the use of this threshold has been challenged and remains a subject for further investigation.¹¹

In this case, when death began to appear more likely we were honest with the family, but due to the patient's fluctuating course we adopted a 'poised to intensify' approach. Hence, chest drain insertions and further antibiotics in such close proximity to an EoL pathway. The tendency for encephalopathy to lift suddenly is one that many clinicians will recognise, and the experience of finding a previously obtunded patient once more alert and conversational is highly disconcerting. Attempts by the clinicians to reassure themselves that their plans were consistent with the patient's goals (a deficit in care identified in the study by Poonja and colleagues)³ were hampered by fluctuating levels of consciousness and variable mental capacity, while the patient's mother, understandably overwhelmed by the gravity of the situation, could not reasonably be asked to determine the level of care.

Looking back, it would seem that the suffering this patient experienced was not justified in view of her death. However, she was pleased that she had 'pulled through' her time on ICU, and her family were uncritical of the care. Until clinicians discover more accurate ways to determine short-term and medium-term prognosis for individuals, or agree on 'markers of futility', it would seem that younger patients with ARLD will remain likely to undergo intensive treatment during severe decompensation episodes. In the words of our intensivist, 'There is no rulebook for this kind of decision-making, and there never will be. Patient selection is paramount and keys to successful decision-making in patients like this maintaining objectivity, and regular inter-disciplinary discussion.'

Learning points

- ▶ Despite advances in care, prognosis in acute-on-chronic liver failure (ACLF) remains poor.
- ▶ Recent large cohort studies have developed well-characterised disease stages, ACLF 1–3.
- ▶ Younger patients with potentially reversible liver disease are at risk of delayed recognition of dying.
- ▶ Fluctuations in patient condition may require changes in therapeutic strategy, but a consistent and continuous approach is still required.
- ▶ Impaired cognitive function requires careful and frequent ascertainment of the patient's stated goals from family and friends.

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Reminder of important clinical lesson

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