

PREHABILITATION: GETTING CANCER PATIENTS FIT FOR THERAPY

Featuring:

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Transcript

Amie Heap: Hello and welcome to Abbott Nutrition Health Institute's POWER OF NUTRITION podcast. I'm Amie Heap and I'm here today virtually with Kathryn Parr, a specialist Oncology Dietitian from the Clatterbridge Cancer Centre in Liverpool, and Beatriz Diaz, a Dietitian and Senior Medical and Scientific Affairs Advisor from Abbott in the United Kingdom. Today we'll be discussing prehabilitation, an emerging therapeutic approach which is producing compelling data and being increasingly implemented among healthcare professionals and patients.

Prehabilitation assists people diagnosed with cancer to maximise their strength and resilience before the initiation of treatment. This novel approach considers nutrition, physical activity and mental wellbeing and has been shown to improve long term outcomes. We're excited to have the chance to discuss this engaging concept.

Thank you both for joining us today! Beatriz, I'll hand it over to you so we can get started!

Beatriz Diaz: Thank you, Amie – it's a pleasure to be here and thanks again Kathryn for joining us. Kathryn, can you tell us a bit more about your role as a Macmillan Dietitian and how you get involved in nutrition support during the patient's journey?

Kathryn Parr: It's great that I'm able to join you Amie and Beatriz. I thought maybe I'd start off with just a small introduction about myself and how I got to be where I am now. My career as a dietitian started quite a few years ago back in 1986 where I studied dietetics at the University Hospital in London Ontario, Canada. From there I went on to do my dietetic internship at the other end of the country in Vancouver General Hospital. After graduating from there I went back to London and worked with liver transplant patients. A magazine came through the Canadian post, it was for a job in Bermuda, so I quickly packed my suitcase and relocated to Bermuda where I worked for 11 years before moving to England in 2003 with my husband and son. I started pretty well working at Clatterbridge Cancer Centre the day after I arrived in England. That's where my journey working with cancer patients began. From there Macmillan, in 2015 adopted me!

At Clatterbridge Cancer Centre, we manage patients who are having treatment for cancer such as chemotherapy, radiotherapy, and immunotherapy and we manage the patients while they complete their various treatments. For example patients having radiotherapy will come Monday to Friday for about 8 weeks of treatment.

Many of our patients are seen in the outpatient setting, but we also see patients that may need admission to one of our wards for different reasons. We aren't a hospital that does surgery, so a patient that needs surgery for treatment would have this done at another hospital before they come to us. Some of these surgical patients may have been involved in a prehab programme at the hospital where they had their surgery.

Due to the treatment side effects many of our patients need oral nutritional supplements, and some may need enteral feeding through a nasogastric tube or some come to us with a feeding gastrostomy tube already in place. We are seeing a little bit more of parenteral nutrition on our wards, for patients that are unable to have enteral feeds.

A large proportion of my role is seeing head and neck cancer patients, but I am also involved in seeing patients from other tumor groups. I should also mention that the patients when they come to us are only under us whilst they're having their treatment, so once they've completed their treatment, they go back to their community setting so we have to transfer their nutritional care to the community dietitians closer to where they live.

Beatriz Diaz: Thanks Kathryn. In this podcast, we want to focus on the importance of prehabilitation. Can you describe what prehabilitation is and in what type of patients it's used?

Kathryn Parr: I would describe prehabilitation or prehab as getting the patient fit for their cancer treatment. This is different from rehabilitation, which focuses more on the therapies a patient would have after they have finished their treatment. Prehab programmes can include exercise therapy, stress and anxiety reduction classes, perhaps quitting smoking classes or there could be a nutrition component to it.

Evidence is showing that early nutritional counselling is beneficial for the improvement of treatment tolerance, to reduce side effects and also to improve treatment outcomes. Patients who can maintain a better nutritional status need less nutritional support and show a significant decrease in hospital admissions. Our Prehab programme at Clatterbridge wasn't multimodal. Many prehab programmes have 2 or more treatment therapies. We only had funding for the nutrition component and our prehab programme was just for head and neck cancer patients, but it could work for any tumour group.

Beatriz Diaz: That's really interesting Kathryn, thank you. What is the dietitian's role during prehabilitation and what is the patient's journey during your prehabilitation service?

Kathryn Parr: We had 3 staff that were involved in the prehab project: we had a band 3 Dietetic Assistant, a band 6 Dietitian and myself. And we had funding to give 3 additional days a week to run the programme over 1 year. All head and neck cancer patients were referred to us at the earliest point after they'd seen the consultant for their initial appointment.

From that consultation an electronic action sheet was sent to our dietetic assistant so she was able to start the nutritional screening on all these patients. And any patient that was identified to be at risk was referred to the dietitian before they started their treatment. So there was a 2-4-week opportunity to make a difference for the patient. And evidence is showing that this can be enough time to improve outcomes. Prehab allows the patient to improve their nutrition before they start their cancer treatment, and we hoped that by giving them the information as early as we could, we could improve their journey. If we picked up in this appointment that the patient needed referral to a speech and language therapist for example, this could be arranged at this prehab appointment as well. Some of the patients that came to this appointment had feeding tubes already in place and could have been losing weight so this was an opportunity to adjust their feeding at that time so they didn't go on to lose more weight before they started their treatment.

Beatriz Diaz: That makes perfect sense. What nutrition support strategies do you focus on during prehabilitation?

Kathryn Parr: At the initial appointment we address any diet and cancer myths; a lot of patients have already surfed the net before they come to this appointment. For example, they might have started taking certain vitamins and minerals so we have to go over that as that may not be best as some vitamins and minerals could interact with the treatment that they're having.

We also go through a head and neck symptom checklist. This looks at 17 different symptoms which could impact on nutrition. And the patient rates these symptoms on a scale of 1-5, 1 being no impact and 5 being high impact. So this symptom checklist is really useful to identify the key symptoms that are impacting on the patient's nutrition and helps us focus on what information we can go over with them at that appointment.

The patient leaves their appointment with a package of information. We give them an 'Eating well and coping with side effects' booklet that has all sorts of information in it, give some food fortification advice. We also give them a meal and snack list that highlights the foods that have good sources of protein and calories. Some patients may not be on nutritional supplements, so we might get them started on oral nutritional supplements at this appointment as well. And some patients have been on oral nutritional supplements for

some time and they might be going through taste fatigue. At this appointment it gives us the opportunity to discuss with the patient different ways they can use their supplements.

Beatriz Diaz: Another question about nutritional screening. Do you think it is important in prehabilitation? Do you do nutritional screening to your patients and if so how do you screen for malnutrition and muscle loss?

Kathryn Parr: Nutritional screening is very important. We don't have the resources to see every patient that comes with a head and neck cancer diagnosis. For example we have 400 head and neck cancer patients that come through every year, so we need to screen to prioritise those in highest need. So our assistant uses a screening tool called Nutriscore which is validated for the cancer outpatient setting and can be done on the phone or in person. We also use the hand grip dynamometer to screen for low muscle strength. And also we use the Body mass index value as the Nutriscore didn't identify patients that had a body mass index less than 18.5. Any patient that scored 5 or more on the Nutriscore; or had a low BMI or had a feeding tube was offered a dietetic prehab appointment to see the dietitian.

Beatriz Diaz: What are the key nutrients patients need to ensure they are fit for treatment?

Kathryn Parr: I focus on meeting energy requirements and also making sure that patients are getting adequate high-quality protein in their diets; adequate fluids are also important. Many patients with cancer have low vitamin D, so I also consider this in their consultation. Many patients don't eat enough protein at breakfast and lunch, they usually get it with their dinner meal, so I give them suggestions on how to improve protein intake at each mealtime so it's consistent at breakfast, lunch and dinner. So this is a good opportunity to use products like the whey protein or dried milk powder to improve protein intake. There is more evidence suggesting that β -hydroxy- β -methylbutyrate or HMB can help maintain muscle mass. It's a metabolite of the branched chain amino acid leucine and it's found naturally in low levels in the diet.

I have been using an oral nutritional supplement that contains HMB for patients that are identified with low hand grip strength, who scored high on the SARC-F and who are in the over 65 age group. The added benefit of this supplement it's got vitamin D. Research is emerging that 3 grams/day of HMB is needed to improve body composition and stimulate muscle protein synthesis. However, further research is needed in this area.

Beatriz Diaz: Do you work towards specific body weight goals or just muscle mass or strength goals before treatment?

Kathryn Parr: For patients with body mass index between 18.5-30, I use actual body weight in calculating energy, protein and fluid requirements as a starting point and then I monitor and adjust as required. So for example I would use 25-30 kcal/kg for energy and 1.2 grams protein-1.5 grams protein /kg.

The ANHI did a webinar recently that gave excellent guidance on how to calculate energy requirements for patients at the extremes of body mass index. Many of our patients aren't in the normal BMI range, we have quite a few that are greater than 30 BMI. Evidence is showing that low muscle mass is found in more than 50% of patients at diagnosis, despite only 10% being classed as underweight. So I feel it's really important to take measurements that assess strength and muscle mass before the patients start their treatment. Body composition measurement ideally should be used, but not all centres have these scales. I think instead of saying "what is the patients weight?" we need to be saying "what is the patient's muscle stores and strength?" We didn't use it in our programme this time, but the sit to stand test would be a great tool to use in the prehab appointment.

Beatriz Diaz: What outcomes have you seen so far in your practice with the use of prehabilitation?

Kathryn Parr: The results from our 1-year project showed that we were able to reduce hospital admissions for nutritional reasons by 22%. And we improved the head and neck cancer pathway and we were cost effective. We also did a questionnaire with the patients and carers to evaluate the prehab appointment and 93% of the patients gave it the highest rating. Some of the feedback we got from these evaluations were "We felt more informed and better able to cope because of the information and support at the pre-treatment appointment." Also they said, "We really appreciated seeing the dietitian at the prehab appointment, the advice and support was useful." Other patients say they felt they couldn't get through the treatment as well without the help. They said they felt confident leaving the consultation knowing how to improve their nutritional status, and they knew who to contact if they had any questions.

After the end of the study I had to present the results to the key stakeholders at Clatterbridge and I got very positive feedback. And because of that I was able to get permanent funding to continue the prehab programme, so we were really happy about that.

Beatriz Diaz: That is great outcome data and also fantastic news about the feedback and that you can continue to do the prehabilitation programme. Has your prehabilitation programme been affected by the COVID-19 pandemic? And if so, how have you changed your practice?

Kathryn Parr: During the COVID we had to shift the way we saw patients so the face to face appointment for the screening and prehab dietetic appointment wasn't possible. So these appointments had to be done on the phone, which isn't always ideal. Certain parts of the prehab programme couldn't be done like the, we weren't able to measure the handgrip measurement so we swapped over to using the SARC-F screening tool and that was really good to identify which patients were struggling with strength, assistance with walking, rising from a chair, climbing and if they had a history of falls, so I think that was a positive thing that came from not being able to use the handgrip measurement.

We also struggled to do the nutrition symptom checklist - we found this difficult to do over the phone. So we had to omit that from that prehab appointment. We also really struggled with staffing shortages and long term sickness with our team and so we had to reduce the number of contacts we had with patients. Hopefully now things are settling down we'll be able to get back to running the programme how it needs to be run.

Beatriz Diaz: Yes, let's hope that happens soon. We know that exercise, in particular resistance training, is key during prehabilitation. Do you give any exercise recommendations to your patients?

Kathryn Parr: Resistance exercise increases muscle strength and maintains lean body mass in cancer patients so it's really important. And research is showing that cancer patients should consider undertaking resistance exercise as an effective countermeasure for treatment related adverse effects.

Exercise therapy is not my expertise however, so I don't really feel confident at this point to be recommending, like an exercise programme. However I do try to promote physical activity and explore with the patients which forms of exercise might be realistic and achievable for them during their treatment and I generally encourage them just to keep moving. There are sort of things like resistance bands and hand grip trainers that we could use. I refer patients to leaflets that are available through our Macmillan Centre and also Abbott has a very good exercise booklet so I use these as handouts for people that show an interest. I feel like as food is medicine, that exercise is medicine too and that diet and exercise should be combined together for the best way to maintain muscle stores during treatment.

We've got a study starting up in the near future at our centre that's going to be looking at exercise in head and neck cancer patients for 2 months. This study is going to look at pre-treatment exercise and then for 2 months post-treatment across 2 units in the Northwest and Northeast of England. So I'm excited to see the results of this and what the patients are able to do and how they feel that exercise can fit into their programme. Because the head and neck cancer treatment can be quite grueling so it will be really good to find out if the patients are able to do the exercise programme.

Beatriz Diaz: That sounds like a really valuable study. What advice would you give to other hospitals or centres that don't currently have a prehabilitation protocol in place?

Kathryn Parr: I would say if you haven't read the Macmillan booklet, it's called "Principles and guidance for prehabilitation within the management and support of people with cancer" this may be a good starting point. I would also say to start doing some screening for muscle strength and function, such as the SARC-F or the hand grip strength test, and there's also the sit to stand test. These are all easy to do and inexpensive and quick to measure. You could also look into getting a body composition measurement scale. I guess I would

say as well to try and get involved in anything related to audit and research. It can be very rewarding, and it's the only way that we can fill in the gaps.

Beatriz Diaz: What do you think is the next step to improve your prehabilitation practice?

Kathryn Parr: Our prehab programme was only for head and neck cancer patients that were at nutritional risk, but other tumour groups could also be offered this programme so I would like to see in the future that we could offer it to other tumour groups. But that's going to require more investment in staffing. I would also like to see exercise and nutrition videos that are put on our hospital link so patients can link onto those to get information, because not all of the patients can see the dietitian. If there's a link that they can go to get the information I think that would be really useful. There's a really good one done by Carla Prado, who's a PhD dietitian at the University of Alberta and this video's on the importance of nutrition to prevent and treat low muscle mass. So I think videos like that are really powerful and make the point to the patients on how important it is to, for nutrition and exercise in maintaining their muscle mass.

I am also currently working on an audit with our physics team and the Liverpool John Moore's University exercise team, and we're looking at CT scans at the 3rd lumbar location to measure muscle mass using a free download from the National Institutes of Health, ImageJ. I can see that this will be something exciting for the future with dietetics. CT scans are routinely done before the patients start their treatment and are usually part of their follow up. So it gives us the opportunity to see what's happening down at the muscle level at the start of their treatment and how it changes at the end of their treatment. We can identify patients that have low muscle stores with this scan and see what's happened to them before and after their treatment.

I think this could be really useful for clinicians to decide what treatment options are best for the patient as well. For example a patient that's identified as having a critically low muscle mass would be offered a different treatment plan, i.e. a lower dose of chemo or shorter duration of radiotherapy or perhaps only having radiotherapy instead of chemoradiotherapy.

Beatriz Diaz: That sounds like a really interesting study and interesting audit. I look forward to hearing the results of that audit if you're willing to share it with us in the future. Prehabilitation is such an important area and I've really enjoyed talking to you today and finding out about your prehabilitation programme at Clatterbridge. I'll now hand over back to Amie to close our session for today.

Amie Heap: Thank you, Beatriz, and thank you both again for joining me today and for providing your expert insights.

Kathryn Parr: Thank you so much for inviting me to do the podcast. It has been really enjoyable and great talking with you.

Amie Heap: Listeners, if you found this topic of interest and would like to hear more from experts on a wide range of subjects, please visit [ANHI.org/uk](https://anhi.org/uk). Abbott Nutrition Health Institute's POWER OF NUTRITION podcast is also on Spotify and we have more than 40 episodes to choose from, so be sure to subscribe today and share us with your colleagues. Thank you for listening and see you next time!

UK-N/A-2100338.

Date of preparation: November 2021
