Multidisciplinary prevention of Medication Related Osteonecrosis of the Jaw

Sturrock A[1], Preshaw PM[2], Hayes C[1], Wilkes S[1] (1) Faculty of Health Sciences and Wellbeing, University of Sunderland (2) Centre for Oral Health Research and Institute of Cellular Medicine, Newcastle University

Introduction

Medication related osteonecrosis of the jaw (MRONJ), is a rare adverse effect of anti-resorptive or anti-angiogenic drug therapy that can cause significant morbidity; commonly prescribed drugs such as bisphosphonates have been associated with MRONJ.[1]

A multidisciplinary approach to the prevention of MRONJ is recommended in the literature for the management of patients prescribed implicated medicines, incorporating both patient and health professional education of the risk of the development of MRONJ[1,2,3]

Low Prevalence → **Significant Morbidity**

11.8% GP and 9.7% pharmacists identified BRONJ as a side effect of bisphosphonates[4]

17% of patients on oral bisphosphonate identified BRONJ as a side effect[5]

Evidence suggests this is not happening

72% of participants reported no cooperation between physicians and dentists[6]

62% of physicians not requesting oral health care by a dentist before bisphosphonate therapy[6]

Method

1-1 semi-structured interviews following a Grounded Theory methodology were used throughout this research[7] with concurrent collection and analysis of qualitative data and constant comparison between participants.

Recruitment via 3 National Institute for Health Research Clinical Research Networks (NIHR CRNs); North East and North Cumbria, Yorkshire and Humber, and North Thames.

Three distinct groups were recruited to the study;

1. Patients with a diagnosis of MRONJ.
2. Patients prescribed oral bisphosphonates,
3. Patients with a diagnosis of osteoporosis not currently undergoing drug treatment

Interviews were audio recorded and transcribed verbatim. Ritchie and Spencer's Framework Analysis (2002)[8] allowed salient themes to be identified from the data.

Results

A total of 23 patients were included in this study. In depth semi-structured interviews were carried out between May 2017 and March 2018 until no more new themes emerged.

Four salient inter-related themes emerged from the data:

(1) Quality of life – physical, psychological and social impact of MRONJ

"This is difficult, but mentally, it gives you some kind of anxiety because you- you know your bone is there-a little piece of bone on your left-hand side is there and then you think, maybe perhaps in the future, you need to have an operation. It's a big operation." (MRONJ 5)

(2) Perceived knowledge – limited awareness of the condition, risk factors or preventative strategies

They didn't explain about (on prescribing) anything about any side-effects or anything about trouble with your teeth. (B-6)

I was given no information about that (risk of MRONJ)…Doctors don't tell you about the side-effects of drugs. (MRONJ-6)

(3) Interprofessional management – perceived organisation hierarchy, professional roles and responsibilities, articulation of risk and communication

I think they (Drs) should be able to provide the risks and the benefit and discuss with the patient what's probably be-best with them. I don't think this is done very well. (MRONJ-6)

I feel as though the pharmacist that I go to, I could ask her anything and she would tell us. I have had a review with her, she's very, very helpful and knowledgeable about medication (B-5)

(4) Wider context – demands on NHS resources and barriers to dental care

You have to pay for the examination and then obviously, depending on the amount of work that you need, that can be quite expensive. And not everybody has that money. (B-6)

Discussion

Comparison with existing literature

Our previous qualitative study of general medical practitioners and pharmacists in England[9] produced similar findings with limited knowledge of both professional groups mirrored in that of the patients interviewed during this study.

Masson (2009) identified that only 11.8% of GMPs and 9.7% of pharmacists advised patients to inform their dentist they were using a bisphosphonate.[4]

The patients interviewed in this study also highlighted a lack of information from prescribers and pharmacists with most patients getting the information from the patient information leaflet.

A small quantitative study of 34 patients with MRONJ utilising the Oral Health Impact Profile (OHIP-14) found that the condition significantly ($p<0.001$) affects quality of life.[10] This study, along with the findings of this research, has highlighted the issues faced by patients and the ongoing physical and psychological distress associated with MRONJ.

Future work and implications for clinical practice

The importance of preventative measures should be stressed to all healthcare professionals managing this particular patient group.

The perspectives of dental professionals on how the professions can collaborate to improve patient care, would be important to consider before implementing any preventative strategies

Further exploration of the role of the pharmacist in the interprofessional team and integration of oral health services should be considered. The MUR and NMS service specification does not currently include bisphosphonates; inclusion could provide an opportunity for reinforcement of preventative advice during the initiation stages of treatment with bisphosphonates.

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