QUEEN'S UNIVERSITY BELFAST

The psychosocial impact of the COVID-19 pandemic on patients with monoclonal gammopathy of undermined significance, smouldering and active myeloma: findings from an international survey

Quinn, S. J., Anderson, L. A., Lohfeld, L., & McShane, C. M. (2021). The psychosocial impact of the COVID-19 pandemic on patients with monoclonal gammopathy of undermined significance, smouldering and active myeloma: findings from an international survey. *British Journal of Haematology*, *194*(2), 294-297. https://doi.org/10.1111/bjh.17427

Published in:
British Journal of Haematology

Document Version:
Peer reviewed version

Queen's University Belfast - Research Portal:
Link to publication record in Queen's University Belfast Research Portal

Publisher rights
Copyright 2021, John Wiley & Sons.
This work is made available online in accordance with the publisher's policies. Please refer to any applicable terms of use of the publisher.

General rights
Copyright for the publications made accessible via the Queen's University Belfast Research Portal is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy
The Research Portal is Queen's institutional repository that provides access to Queen's research output. Every effort has been made to ensure that content in the Research Portal does not infringe any person's rights, or applicable UK laws. If you discover content in the Research Portal that you believe breaches copyright or violates any law, please contact openaccess@qub.ac.uk.

Open Access
This research has been made openly available by Queen's academics and its Open Research team. We would love to hear how access to this research benefits you. – Share your feedback with us: http://go.qub.ac.uk/oa-feedback

Download date:05. Jul. 2024

NOW GRANTED EU CONDITIONAL MARKETING AUTHORISATION.*

TECARTUS▼ (AUTOLOGOUS ANTI-CD19-TRANSDUCED CD3+ CELLS)

IS INDICATED FOR THE TREATMENT OF ADULT PATIENTS WITH RELAPSED OR REFRACTORY MANTLE CELL LYMPHOMA (MCL) AFTER TWO OR MORE LINES OF SYSTEMIC THERAPY INCLUDING A BRUTON'S TYROSINE KINASE (BTK) INHIBITOR[1]

PRESCRIBING INFORMATION

PATIENTS WITH MCL POST-BTK INHIBITOR FAILURE FACE POOR PROGNOSES[2-4]

REGAIN CONTROL WITH AN ORR OF 93% WITH TECARTUS[2]

(PRIMARY ENDPOINT, IN THE PRIMARY ANALYSIS SET **(N=60)†**)

SECONDARY ENDPOINT: DOR
MEDIAN NOT REACHED (95% CI: 8.6, NE)[2]

Kaplan-Meier estimate of the duration of response, as assessed on the basis of review by the independent radiologic review committee, among 56 patients in the primary efficacy analysis who had an objective response. Tick marks indicate censored data.[2]
Adapted from Wang M, et al. *N Engl J Med.* 2020.

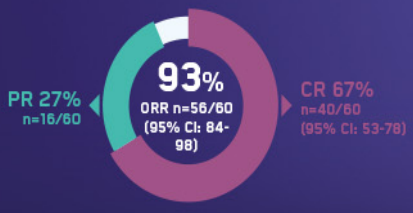
Not an actual patient.

IN THE PRIMARY ANALYSIS SET (N=60) AT 12.3 MONTHS:[2]

EFFECTIVE[2]

PRIMARY ENDPOINT:

PERCENTAGE OF PATIENTS WITH AN OBJECTIVE RESPONSE (CR OR PR)[2]



DURABLE

SECONDARY ENDPOINT: DOR[2]

The median duration of response was not reached (95% CI: 8.6-NE) at a median follow-up of 12.3 months in the primary efficacy analysis set[2†]

- In the patients with ≥2 years follow-up, 43% **(N=12/28)** remained in remission[2]

RAPID

Median time to response was 1 month in the primary analysis set† (range: 0.8-3.1)[2]

TOLERABILITY

Tecartus led to serious and life-threatening toxic events of the type reported with other anti-CD19 CAR T-cell therapies.[2] The most significant and frequently occurring adverse reactions were cytokine release syndrome (91%), infections (56%) and encephalopathy (51%)[1]

Regain control with Tecartus at www.kitecartforum.co.uk (This website contains promotional content)

ZUMA-2 was a phase 2, single-arm, open-label, multicentre trial evaluating the efficacy and safety of a single infusion of Tecartus in adult patients with R/R MCL who had previously received anthracycline or bendamustine-containing chemotherapy, an anti-CD20 antibody, and a BTKi (ibrutinib or acalabrutinib).[2]

*Patients are expected to enroll in a registry and will be followed in the registry in order to better understand the long-term safety and efficacy of Tecartus.[1]

†The first 60 patients treated with Tecartus who had at least 7 months follow-up.[2]

BTKi=Bruton's tyrosine kinase inhibitor; CAR=chimeric antigen receptor; CI=confidence interval; CR=complete response; DOR=duration of response; MCL=mantle cell lymphoma; NE=could not be estimated; ORR=objective response rate; OS=overall survival; PFS=progression-free survival; PR=partial response; R/R=relapsed/refractory.

REFERENCES: 1. Tecartus. Summary of Product Characteristics. **2.** Wang M, Munoz J, Goy A, et al. KTE-X19 CAR T-cell therapy in relapsed or refractory mantle cell lymphoma. *N Engl J Med.* 2020;384(14):1331-1342. **3.** Smith A, Roman E, Appleton S, et al. Impact of novel therapies for mantle cell lymphome in the real world setting: a report from the UK's Haematological Malignancy Network (HMRN). *Br J Haematol.* 2018;181;215-228. **4.** Smith A, Roman E, Appleton S, et al. Impact of novel therapies for mantle cell lymphome in the real world setting: a report from the UK's Haematological Malignancy Network (HMRN) - supplementary appendix. *Br J Haematol.* 2018;181;215-228.

Tecartus, the Tecartus Logo, XLP, KITE KONNECT, the KITE KONNECT Logo, KITE, and the KITE Logo are trademarks of Kite Pharma, Inc. GILEAD is a trademark of Gilead Sciences, Inc. All other trademarks referenced herein are the property of their respective owners.

TECARTUS®▼
(autologous anti-CD19-transduced CD3+ cells) dispersion for infusion

© 2020 Kite Pharma, Inc. All rights reserved.

UK-CTH-2021-01-0015.
Date of preparation: February 2021

Kite
A GILEAD Company

Accepted Article

MR. STEPHEN JAMES QUINN (Orcid ID : 0000-0002-1671-9947)

DR. CHARLENE MCSHANE (Orcid ID : 0000-0001-8609-0788)

Article type : Letters

LETTER

The psychosocial impact of the COVID-19 pandemic on MGUS, smouldering and active myeloma patients: findings from an international survey

Mr Stephen J. Quinn BSc(Hons)[1], Prof Lesley A. Anderson PhD[2], Dr Lynne Lohfeld PhD[1], Dr Charlene M. McShane PhD[1]

Affiliations

[1]Centre for Public Health, Queen's University Belfast, Belfast, Northern Ireland

[2] Aberdeen Centre for Health Data Science, University of Aberdeen, Aberdeen, Scotland

Correspondence

Dr Charlene McShane
Centre for Public Health
Institute of Clinical Sciences Block B
Royal Victoria Hospital, BT12 6BJ, Belfast
E-mail: c.mcshane@qub.ac.uk
Telephone: +44 (0) 28 9097 6371

Funding information

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/bjh.17427

This article is protected by copyright. All rights reserved

n/a

Word count: 1,000

Number of tables: 2

Supplementary material: 2

Key words: COVID-19; myeloma; monoclonal gammopathy of undetermined significance (MGUS), smouldering myeloma; psychosocial needs

Early in the COVID-19 pandemic, the UK National Health Service (NHS) identified multiple myeloma (MM) patients as a "clinically extremely vulnerable" population[1]. In contrast, the clinical significance of COVID-19 to MM precursors, monoclonal gammopathy of undermined significance (MGUS)[2] and smouldering multiple myeloma (SMM)[3], remains unknown.

Here for the first time we summarise the impact of the COVID-19 pandemic on 274 MM spectrum individuals (66 MGUS, 33 SMM, 175 MM) who participated in the IMPaCCT (Investigating the impact of COVID-19 on caregivers and patients) study. The first wave of this online international longitudinal study took place between 24 April-14 July 2020.

Participants answered open- and closed-ended questions to capture information on their demographics, COVID-19 status and the impact of COVID-19 on them and their care pathways. Quality of life (QoL) was assessed using the World Health Organisation Quality of Life (WHOQOL-BREF[4]) and the EuroQol 5-Dimension-5-Level (EQ-5D-5L[5]) instruments. The survey was pilot tested and then promoted online via social media, blogs and charity/patient advocacy groups. Descriptive statistics were applied to quantitative data. The WHOQOL-BREF and EQ-5D-5L questionnaires were analysed following published guidelines[4,5].

This article is protected by copyright. All rights reserved

Open-ended questions were analysed using qualitative content analysis[6] and framework analysis[7] by two independent reviewers (SQ and LL). Ethical approval was obtained from Queen's University Belfast (MHLS 20_52).

The majority of respondents were female, aged 60+, within 5 years of diagnosis and did not live alone (online supplementary table). Most MGUS and MM respondents resided in the UK (60.6% and 78.9%, respectively) whereas SMM respondents (54.5%) mostly resided in the USA. Although no participants reported a medically confirmed COVID-19 diagnosis, 15.2% suspected they had previously contracted the disease; commonly reported symptoms included fatigue (82.5%), cough (65.0%), fever (65.0%), headache (60.0%) and sore throat (57.5%).

While 69.3% of participants reported their QoL as being good or very good on the WHOQOL-BREF, participants scored lower (indicating less satisfaction) compared to pre-pandemic UK population norms[8], in the physical ($p<0.0001$), psychological ($p<0.0001$) and social ($p<0.0001$) domains but scored higher in the environmental domain (relating to physical/home environment, physical safety, care access and quality, etc.; $p=0.001$) (Table I).

All groups had lower scores (indicating more problems) across the EQ-5D-5L domains compared to pre-pandemic UK normative values[9], with MM respondents reporting more problems across all domains. Notably, high rates of anxiety/depression were reported by MGUS/SMM/MM participants (64.2%), however, only 7.2% considered this to be severe or extreme (Table I).

COVID-19-related anxiety and depression were frequently mentioned, and many people reported distress at being housebound. Older respondents and those with MM were more likely to report they were self-isolating ($p<0.001$). While concerns about contracting COVID-19, experiencing severe symptoms and impact on the future were mentioned ("*It feels as if my life is being wasted*"), many concerns focused on fears of disease progression ("*Concerned myeloma may have spread*"-MM patient, 1-3 years from diagnosis).

Significantly more MM than MGUS or SMM respondents reported altered healthcare appointments (69.7% vs 40.3% and 40.6%, respectively, $p<0.001$). Changes to treatment appointments were reported, with n=22 MM patients reporting chemotherapy appointments were changed, delayed or cancelled. Many participants

This article is protected by copyright. All rights reserved

expressed concern about the impact of delayed or cancelled appointments ("*I worry appointments will be delayed meaning changes in condition aren't picked up as soon as they could be*"-MGUS patient, <1 year from diagnosis), Table II. Fear about COVID-19 exposure, particularly at a hospital, was also noted ("*Reluctant to go to the hospital clinic at all, even for blood work and consultation*"-SMM patient, >5 years from diagnosis). In contrast, MGUS patients were more likely than other participants (p=0.004) to report feeling their care had suffered or they had been abandoned ("*I feel neglected and that my illness isn't of any importance*"-MGUS patient, <1 year from diagnosis).

Most respondents accessing telemedicine services (78.3%) described their experience as positive or satisfactory, citing such advantages as increased convenience. Conversely, some participants reported telemedicine to be less effective than face-to-face appointments, had difficulty understanding information relayed by phone and were left feeling less reassured after their calls. Healthcare professionals and scientists were the most highly trusted sources of COVID-19 information (84.9% and 80.5% trusting most/all information from these sources, respectively), although MGUS respondents reported having less trust in healthcare providers than SMM or MM respondents (p=0.013).

Many respondents highlighted the need for specific information regarding the risk of contracting COVID-19 and shielding. In particular, MM patients wanted to know how to shield properly and for how long whereas pre-cancer patients wanted to know whether they should be shielding ("*I don't know if I should be shielding with MGUS*"-MGUS patient, 4-5 years from diagnosis). Many respondents also wanted continued access to their normal care, including specialist appointments, medical tests and test results.

Individuals across the MM-spectrum appear to have been negatively affected by the COVID-19 pandemic in similar ways, frequently reporting they felt isolated, anxious or depressed. This may be related to the uncertainty of the COVID-19 pandemic, recommended social distancing and self-isolation, plus reduced availability of support and care services. Supporting this, Myeloma UK, the leading UK MM charity, reported unprecedented demand for their MM Infoline and Ask The Nurse service[10] in March 2020, with service users particularly interested in COVID-19-specific issues including risk of infection, lifestyle, emotional issues and end of life support[10].

This article is protected by copyright. All rights reserved

This study benefits from a mixed-methods design, and inclusion of both MGUS and SMM patients, providing novel insight into the impact of the COVID-19 pandemic across the MM spectrum. Planned follow-up surveys will lead to identifying longer-term impacts of the pandemic and additional support needs for this population. However, online recruitment and questions asking for self-reported disease status may reduce the generalisability of the findings to the wider MGUS/SMM/MM population.

Participant concerns over undetected disease progression and lack of timely healthcare appointments/treatments is also linked to the desire for unambiguous information about any heightened COVID-19 risk. As services resume, healthcare and other service providers should also be aware of patients' fears about accessing care in hospitals during the pandemic and plan to address the psychosocial needs of patients across the MM spectrum.

Acknowledgements

The study team would like to thank the participants for taking the time to complete this survey. The authors would also like to acknowledge the contributions of the wider IMPaCCT study team members in the initial design of the study. The named authors take sole responsibility for the analysis and interpretation presented within this paper.

Author contributions

- LA and CMcS designed the initial concept for the study with input from the wider IMPaCCT team based at Queen's University Belfast and University of Aberdeen
- SQ, CMcS and LL analysed the data
- SQ wrote the first draft of the paper

This article is protected by copyright. All rights reserved

Accepted Article

- SQ, CMcS, LA and LL had access to the data and reviewed/revised the paper.

Accepted Article

Competing interests

The authors have no competing interests.

References

1. National Health Service UK. Who's at higher risk from coronavirus. 2020. Available at: https://www.nhs.uk/conditions/coronavirus-covid-19/people-at-higher-risk/whos-at-higher-risk-from-coronavirus/. Date accessed: 22 November 2021
2. Gonzalez-Lugo JD, Bachier-Rodriguez L, Goldfinger M, Shastri A, Sica RA, Gritsman K, et al. A case series of Monoclonal Gammopathy of Undetermined Significance and COVID-19. Br J Haematol. 2020;190(3):e130–3.
3. Wang B, Van Oekelen O, Mouhieddine TH, Del Valle DM, Richter J, Cho HJ, et al. A tertiary center experience of multiple myeloma patients with COVID-19: Lessons learned and the path forward. J Hematol Oncol. 2020;13(1):1–12.

This article is protected by copyright. All rights reserved

Accepted Article

4. World Health Organisation. WHOQOL-BREF: Introduction, administration, scoring and generic version of the assessment: field trial version, December 1996. Geneva; 1996. (Programme on Mental Health).

5. EuroQol Research Foundation. EQ-5D-5L User Guide. 2019;

6. Erlingsson C, Brysiewicz P. A hands-on guide to doing content analysis. African J Emerg Med. 2017;7(3):93–9.

7. Srivastava A, Thomson SB. Framework Analysis : A Qualitative Methodology for Applied Policy Research. J Adm Gov. 2009;4(2):72–9.

8. Skevington SM, Mccrate FM. Expecting a good quality of life in health: Assessing people with diverse diseases and conditions using the WHOQOL-BREF. Heal Expect. 2012;15(1):49–62.

9. Szende A, Janssen B, Cabasés J. Self-reported population health: An international perspective based on EQ-5D. Self-Reported Popul Heal An Int Perspect Based EQ-5D. 2014;1–196.

10. Quinn SCM, Watters ED, Dempsey SL, Dolman KS, Laketic-Ljubojevic I. Providing tailored information and support through the Myeloma UK, Myeloma Infoline and Ask The Nurse services during the COVID-19 pandemic. Psychooncology. 2020;29(9):1439–41.

This article is protected by copyright. All rights reserved

Table I: WHOQOL-BREF and EQ-5D-5L findings

WHOQOL-BREF	Normative values[8, 9]	Total (N=266*)	MGUS (N=65)	SMM (N=33)	MM (N=168)	Comparisons between MM subgroups (p-value)
Domain		**Mean (SD)**	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**	
Physical Health	76.5	59.5 (20.3)	58.5 (22.5)	70.6 (19.5)	57.8 (19.1)	p=0.002
Psychological	67.8	61.1 (18.5)	56.3 (20.2)	62.1 (20.6)	62.8 (17.1)	p=0.081
Social relationships	70.5	61.5 (19.7)	57.8 (21.5)	63.6 (21.9)	62.5 (18.4)	p=0.153
Environment	68.2	71.5 (16)	65 (19.3)	75.2 (14.5)	73.2 (14.1)	p=0.002
EQ-5D-5L Domain						
Mobility		**N(%)**	**N(%)**	**N(%)**	**N(%)**	
Any problem	18.4%	143 (53.8)	31 (47.7)	12 (36.4)	100 (59.5)	p=0.027
No problems		123 (46.2)	34 (52.3)	21 (63.6)	68 (40.5)	p=0.066
Slight problems		75 (28.2)	20 (30.8)	7 (21.2)	48 (28.6)	
Moderate problems		44 (16.5)	6 (9.2)	5 (15.2)	33 (19.6)	
Severe problems		24 (9.0)	5 (7.7)	0	19 (11.3)	
Unable		0	0	0	0	
Self-care						
Any problem	4.3%	61 (22.9)	13 (20.0)	4 (12.1)	44 (26.2)	p=0.173
No problems		205 (77.1)	52 (80.0)	29 (87.9)	124 (73.8)	p=0.570
Slight problems		40 (15.0)	10 (15.4)	3 (9.1)	27 (16.1)	
Moderate problems		20 (7.5)	3 (4.6)	1 (3.0)	16 (9.5)	
Severe problems		1 (0.4)	0	0	1 (0.6)	
Unable		0	0	0	0	
Usual activities						
Any problem	16.3%	163 (61.5)	37 (57.8)	12 (36.4)	114 (67.9)	p=0.002
No problems		102 (38.5)	27 (42.2)	21 (63.6)	54 (32.1)	p=0.037
Slight problems		88 (33.2)	22 (34.4)	8 (24.2)	58 (34.5)	
Moderate problems		55 (20.8)	9 (14.1)	4 (12.1)	42 (25.0)	
Severe problems		18 (6.8)	6 (9.4)	0	12 (7.1)	
Unable		2 (0.8)	0	0	2 (1.2)	
Missing values		1	1	0	0	
Pain/discomfort						
Any problem	33.0%	214 (80.8)	50 (78.1)	26 (78.8)	138 (82.1)	p=0.750
No problems		51 (19.3)	14 (21.9)	7 (21.2)	30 (17.9)	p=0.457

This article is protected by copyright. All rights reserved

Slight problems		108 (40.8)	22 (34.4)	17 (51.5)	69 (41.1)	
Moderate problems		82 (30.9)	21 (32.8)	9 (27.3)	52 (31.0)	
Severe problems		24 (9.1)	7 (10.9)	0	17 (10.1)	
Extreme problems		0	0	0	0	
Missing values		1	1	0	0	
Anxiety/depression						
Any problem	21.0%	170 (64.2)	49 (76.6)	20 (60.6)	101 (60.1)	p=0.059
No problems		95 (35.9)	15 (23.4)	13 (39.4)	67 (39.9)	p=0.056
Slight problems		103 (38.9)	26 (40.6)	8 (24.2)	69 (41.1)	
Moderate problems		48 (18.1)	15 (23.4)	10 (30.3)	23 (13.7)	
Severe problems		15 (5.7)	6 (9.4)	2 (6.1)	7 (4.2)	
Extreme problems		4 (1.5)	2 (3.1)	0	2 (1.2)	
Missing values		1	1	0	0	
		Mean (SD)	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**	
Visual assessment score	77.3	66.2 (19.1)	64.9 (19.6)	69.3 (20.6)	66 (18.7)	p=0.4378
Missing values		3	1	0	2	

*Abbreviations: MGUS, monoclonal gammopathy of undetermined significance; MM, multiple myeloma; SD, standard deviation; SMM, smouldering multiple myeloma. *Includes only those who responded to WHOQOL-BREF or EQ-5D-5L questionnaires*

Accepted Article

This article is protected by copyright. All rights reserved

Table II: Supporting quotes from qualitative analysis of COVID-19 impact on myeloma-spectrum respondents

Psychological impacts
• *"I've followed all the rules but it has made me anxious"* - MGUS, female, >5 years since diagnosis • *"It's increased my already high level of anxiety"* - MGUS, female, 4-5 years since diagnosis • *"Worried if I got sick I would be considered high risk and end up in ICU"* - MGUS, female, >5 years since diagnosis • *"Feel more frightened now of having cancer now that there is the added threat of coronavirus"* - MM, female, 1-3 years since diagnosis • *"Depressed, which isn't good when you have cancer"* - MM, male, 1-3 years since diagnosis • "*Sensation of having been abandoned*"- SMM, female, >5 years since diagnosis • *"I'm a prisoner in my own home"* - MM, male, unknown time since diagnosis • *"It feels as if my life is being wasted"* - MM, female, over 5 years since diagnosis
Social/financial impacts
• *"I desperately miss cuddles with my young grandchildren and my own children"* - MM, female, 1-3 years since diagnosis • "*Miss socialising with friends and family. The magnitude of these sacrifices is increasing*"- MM, male, >5 years since diagnosis • "*My son (aged 7) is at home 24/7. I have very little time to myself*"- MM, female, 1-3 years since diagnosis • *"Not able to go out dancing or to restaurants. These are what keep me sane"* - MM, female, 4-5 years since diagnosis • "*I have lost business due to the virus*"- SMM, female, >5 years since diagnosis • "*Nearly all of my scheduled work has been postponed indefinitely or cancelled*"- SMM, female, >5 years since diagnosis
Health/care impacts
• *"Need assurance that condition is stable"* - MGUS, female, >5 years from diagnosis • *"Concerned myeloma may have spread"* - MM, female, 1-3 years since diagnosis • *"Essential treatment will be cancelled, delayed or not available to me"* - MM, male, 4-5 years since diagnosis • *"We are older, retired and more susceptible to germs"*-SMM, female, <1 year since diagnosis • *"I feel neglected and that my illness isn't of any importance"* - MGUS, female, <1 year since diagnosis • "*I worry appointments will be delayed meaning changes in condition aren't picked up as soon as they could be*"- MGUS, female, <1 year since diagnosis • *"Reluctant to go to the hospital clinic at all, even for blood work and consultation"* - SMM, female, >5 years since diagnosis
Telemedicine experience
• "Nearly *as good as in person*"- MGUS, male, 1-3 years since diagnosis • "*I don't have to sit in the waiting room for three hours*"- MM, female, over 5 years since diagnosis • "*It is not always as easy to take in information in a phone call*"- MM, female, 1-3 years since diagnosis • "*Not as reassuring as a face to face appointment*"- MM, female, 4-5 years since diagnosis

This article is protected by copyright. All rights reserved

What further information/services/support would be useful for you at this time?
• "*Being able to attend my appointments*"- MGUS, female, 4-5 years since diagnosis • *"Specific advice around multiple myeloma and COVID-19"* - MM, male, 4-5 years since diagnosis • *"It would be useful to know how people with Smoldering Multiple Myeloma are doing with Covid19 diagnosis. Are they doing the same, worse or better than the normal population?*"- SMM, female, >5 years since diagnosis • *"I don't know if I should be shielding with MGUS"* - MGUS, female, 4-5 years since diagnosis • *"Knowing if/when shielding will end or be modified"* - MM, male, 4-5 years since diagnosis • *"I would like normal service, help and support for cancer patients. We have been forgotten during this crisis and there should have been plans in place to continue help and support"* - MM, male, 1-3 years since diagnosis
Quotes which are underlined are those which appear in the text, with demographic descriptions of the respondent provided

Accepted Article

This article is protected by copyright. All rights reserved