Cancer Therapy & Oncology
International Journal
ISSN: 2473-554X

Juniper Publishers
key to the Researchers

Short Communication
Volume 17 Issue 3 - November 2020
DOI: 10.19080/CTOIJ.2020.17.555964

Cancer Ther Oncol Int J

Lack of Awareness in Managment and Monitorin of Monoclonal Gammopathy of Undetermined Significance (MGUS) in Patients aged 60 years and more in Primary Health Care: Short Communication

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Submission: September 30, 2020; **Published:** November 25, 2020

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Abstract

Monoclonal gammopathy of unknown significance (MGUS) presents premalignant disorders, associated with a rate of progression to multiple myeloma or a related malignant condition of 1 percent per year or less. This rare condition occurs in approximately 5% of patients over age 65. As it is known, that most of patients in age 60 or more suffer from comorbidity, these patients present a big challenge for general practicionare in order to proper diagnose of MGUS, due to overlapping of symtoms associated with primary disorder. As it is not recommended routine screening for MGUS in the general population, there is lack of awereness of GP, and unclear criteria how to recognise and identify this high-risk cohort. Once, when MGUS is confirmed, the patient should be risk-stratified to determine the need for bone marrow biopsy and to predict the risk of progression to more serious conditions. Even though most patients diagnosed with MGUS will never develop malignant disease, follow-up is needed. Current practice guidelines do not recommend routine screening for MGUS in the general population because of the lack of proven benefit and absence of curative or preventive therapy

Keywords: Monoclonal gammopathy; M-protein; Comorbidity; Guidelines

Abbreviations: MGUS: Monoclonal Gammopathy of Unknown Significance; LCMGUS: Low Light Chain Monoclonal Gammopathy of Undetermined Significance; GP: General Practicioner; SPEP: Serum Protein Electrophoresis; MM: Multiple Myeloma

Introduction

Monoclonal gammopathy of undetermined significance (MGUS) presents a rare premalignant clonal plasma cell disorder, characterized by the presence of a monoclonal (M) protein, less than 10% of clonal plasma cells in the bone marrow and absence of multiple myeloma or related lymphoplasmacytic malignancies [1,2]. It is associated with a rate of progression to multiple myeloma or a related malignant condition of 1 percent per year or less [3]. The prevalence of monoclonal gammopathy of undetermined significance among persons 50 years of age or older has not been accurately determined [4]. In previous studies, the frequency of monoclonal immunoglobulins in serum from a normal population has been reported to be 0.5 to 3.6 percent among patients seen in community practice, and usually it was the coincidental finding of MGUS [5-7]. Previous reports expected that the number of living individuals diagnosed with MGUS will be well over a million in next 30 years [8]. Cause current practice guidelines do not recommend routine screening for MGUS in the general population because of the lack of proven benefit and absence of curative or preventive therapy. In this overview, we assume severe difficulities in managment of MGUS in patients aged 60 years and more in primary health care.

MGUS and Comorbidity

Comorbidity is defined as the co-occurence of more than one disorder in the same individual as result from many factors. One disorder may represent an early manifestation of another, and sometimes can overlap with many other disorders [9]. These conditions present a big challenge in family medicine practice, while comorbidities correlate with aging and make the elderly particularly vulnerable to toxicities of therapy [10]. Observations of comorbidity among populations may be extremely useful in informing the therapist's understanding of an individual patient, especially in family medicine practice [11]. For example, the presence of one disorder in a patient may make another condition more visible, even though it may be no more common than in a general population. Similarly, the presence of one disorder may influence the observations of clinicians and make them more likely to report the presence of another disorder. The conceptual and pragmatic logic of a generalist approach to the care of patients with chronic illness is compelling. The issue of comorbidity highlights the intricacy of primary care and the complexity of providing holistic care. Another challenge to medical generalism is the difficulty of measuring health status and clinical outcomes, especially in rare disorder. As usually chronic disease starts at age 50 and more, a monoclonal protein is often discovered incidentally on routine blood testing (as part of an investigation for a clinical condition such as osteophorosis, rheumatological disorders, nephrotic syndrome, peripheral neuropathy, congestive heart failure, endocrine disorders) [12]. In those patients with comorbidities who present with anemia, back pain, renal insufficiency, osteolytic bone lesions, or unexplained peripheral neuropathy, they should be screened for the presence of an M-protein [13]. Routinely found laboratory small monoclonal abnormalities, low light chain monoclonal gammopathy of undetermined significance (LCMGUS) should be follow, eventhough it represents a relatively benign condition [14].

Low knowledge and awareness of MGUS among general practitioners

Clinical diagnosis and regular monitoring of the population at risk of chronic diseases is clinically and financially resource-intensive. Mining administrative data could be an effective alternative way to identify this high-risk cohort. Once, when an M protein is detected, the majority of patients will initially be under the care of their primary care physician (GP) or a clinician outside haematology [15]. Due to M-findings, comprehensive history analysis, physical examination and laboratory tests (serum protein electrophoresis to quantify the protein, serum immunofixation, serum free light chains, complete blood cell count, calcium and creatinine) should be done, taking into consideration the differential diagnosis of monoclonal gammopathies. Nowadays, one of the biggest problem in every day clinical practice is early recognition of this rare medical condition. McShane CM et al. explored GP knowledge and awareness of MGUS and their perceived support needs to manage MGUS patients within primary care [16]. The results showed a lack of knowledge and awareness of MGUS among general practitioners and suggested multidisciplinary approach with support from haematology in providing these services. These findings are also in agreement with previous studies with MGUS patients and haematology healthcare professionals who reported low awareness of MGUS outside of haematology, which may be associated with no special education in this field and to burn out of GP-s [17,18]. Cause these patients usually present with no tipical symptoms, MGUS is classified as a 'hard to suspect' premalignat lesion [19].

Working groups involving primary care and haematology specialists in follow up

It is relatively easy to order serum protein electrophoresis (SPEP), serum immunofixation, and serum FLC assays, clinicians need to be more judicious when ordering these tests, given the consequences of a MGUS diagnosis. These tests should be performed only in patients in whom there is clear suspicion that could be associated with M-protein. After, when MGUS is confirmed, the patient should be risk-stratified to determine the need for bone marrow biopsy and to predict the risk of progression to more serious conditions. In patients with low-risk MGUS who do not have any unexplained clinical concerns, skeletal imaging and bone marrow biopsy can be deferred. The Mayo Clinic risk stratification model is used with low-risk defined as having all of the following: serum M-protein ≤1.5 g/dL, IgG isotype, and normal FLC ratio [20,21]. Routine skeletal imaging and bone marrow biopsy in low-risk MGUS have a low yield. In these patients, a follow-up assessment of M-protein level in next 6 months will most likely identify any patient who needs further evaluation. While approximately 50% of MGUS patients are at low risk, avoiding skeletal imaging and bone marrow biopsy in these patients will minimize health care costs without adversely affecting clinical outcome [22]. Future research on biomarkers in the progression from MGUS to MM (multiple myeloma) will give more insight in the unknown pathogenesis of this hematological malignancy [22]. This would improve research by elucidating new pathways and potential therapeutic targets as well as clinical management by closer follow-up and earlier treatment of high-risk MGUS patients. Despite this, there is lack of increasing government and public demand for primary care to expand its role in cancer prevention, early detection and control, and management within the community especially in rare hematological disorder. Even though most patients diagnosed with monoclonal gammopathy of undetermined significance will never develop malignant disease, follow-up is needed to identify those patients at risk of progression [23].

The challenge therefore remains to increase GP awareness of MGUS, regular diagnostic approach and new biomarkers in laboratory work. Also, there is important role of GP-s in educating patients to report any new worrisome symptom (bone pain, fatigue, neuropathy, weight loss, night sweats) with previous detected MGUS, cause these could be a significant as predictor

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of disease progression and appropiate staging All these steps, may minimaze major complications and initate proper timely treatment [24]. Discontinuation of follow-up can be considered for patients with a life expectancy of <5 years and among those >80 years old, consistent with screening guidelines for other common yet potentially curable cancers (discontinuation of screening at >65 years of age for cervical cancer, >75 years for breast and colon cancers, and >80 years for lung cancer).

Conclusion

Current practice guidelines do not recommend routine screening for MGUS in the general population because of the lack of proven benefit and absence of curative or preventive therapy. Patients with more comorbidities may present severe difficulities in early detection and managment of MGUS, due to overlapping of symtomps. Follow-up is needed to identify those patients at risk of progression. Future research should offer better biomarkers in order to predict the risk of transformation to MM.

Acknowledgement

None.

Funding

No funding was received.

Declaration of Interest

The authors declare that there is no conflict of interest that could.

References

1. Rajkumar SV, Dimopoulos MA, Palumbo A, Blade J, Merlini G, et al. (2014) International Myeloma Working Group updated criteria for the diagnosis of multiple myeloma. Lancet Oncol 15(12): e538-e548.
2. Kyle RA, Therneau TM, Rajkumar SV, Janice R Offord, Dirk R Larson, et al. (2002) A long-term study of prognosis in monoclonal gammopathy of undetermined significance. N Engl J Med 346(8): 564-569.
3. Kyle RA (1978) Monoclonal gammopathy of undetermined significance: natural history in 241 cases. Am J Med 64(5): 814-826.
4. Kyle RA, Therneau TM, Rajkumar SV, Dirk R Larson, Matthew F Plevak, et al. (2006) Prevalence of Monoclonal Gammopathy of Undetermined Significance. N Engl J Med 354(13): 1362-1369.
5. Saleun JP, Vicariot M, Deroff P, Morin JF (1982) Monoclonal gammopathies in the adult population of Finistere, France. J Clin Pathol 35(1): 63-68.
6. Aguzzi F, Bergami MR, Gasparro C, Bellotti V, Merlini G (1992) Occurrence of monoclonal components in general practice: clinical implications. Eur J Haematol 48(4): 192-195.
7. Malacrida V, De Francesco D, Banfi G, Porta FA, Riches PG (1987) Laboratory investigation of monoclonal gammopathy during 10 years of screening in a general hospital. J Clin Pathol 40(7): 793-797.
8. Bird J, Behrens J, Westin J, Ingemar Turesson, Mark Drayson, et al. (2009) Haemato-oncology Task Force of the British Committee for Standards in Haematology, UK Myeloma Forum and Nordic Myeloma Study Group. UK Myeloma Forum (UKMF) and Nordic Myeloma Study Group (NMSG): guidelines for the investigation of newly detected M-proteins and the management of monoclonal gammopathy of undetermined significance (MGUS). Br J Haematol 147(1): 22-42.
9. Salisbury C (2013) Multimorbidity: redesigning health care for people who use it. Lancet 63(607): 64-65.
10. Grumbach K (2003) Chronic illness, comorbidities, and the need for medical generalism. Ann Fam Med 1(1): 4-7.
11. Bodenheimer T, Wagner EH, Grumbach K (2002) Improving primary care for patients with chronic illness. JAMA 288(14): 1775–1779.
12. Brigden M, Venner C (2014) Monoclonal gammopathy and primary care. BCMJ 55(1): 14-22.
13. Merlini G, Palladini G (2012) Differential diagnosis of monoclonal gammopathy of undetermined significance. Hematology Am Soc Hematol Educ Program 2012: 595-603.
14. Pelzer, BW, Arendt, M, Moebus S, Lewin Eisele, Karl-Heinz Jöckel, et al. (2018) Light chain monoclonal gammopathy of undetermined significance is characterized by a high disappearance rate and low risk of progression on longitudinal analysis. Ann Hematol 97(8): 1463–1469.
15. Bird J, Behrens J, Westin J, Turesson I, Drayson M, et al. (2009) UK myeloma forum (UKMF) and Nordic myeloma study group (NMSG): guidelines for the investigation of newly detected M-proteins and the management of monoclonal gammopathy of undetermined significance (MGUS) Br J Haematol 147(1): 22–42.
16. McShane CM, Murphy B, Santin O, Anderson LA (2019) Low knowledge and awareness of monoclonal gammopathy of undetermined significance (MGUS) among general practitioners. BMC Fam Pract 20(1): 61.
17. McShane CM, Murphy B, Lim KH, Anderson LA (2018) Monoclonal gammopathy of undetermined significance as viewed by haematology healthcare professionals. Eur J Haematol 100(1): 20–26.
18. Lyratzopoulos G, Neal RD, Barbiere JM, Rubin GP. Abel G (2012) Variation in number of general practitioner consultations before hospital referral for cancer: findings from the 2010 National Cancer Patient Experience Survey in England. Lancet Oncol 13(4): 353–365.
19. Lyratzopoulos G, Wardle J, Rubin G (2014) Rethinking diagnostic delay in cancer: how difficult is the diagnosis? BMJ (Clin Res Ed) 349: g7400.
20. Dingli D, Ailawadhi S, Bergsagel PL, Francis K Buadi, Angela Dispenzieri, et al. (2017) Therapy for Relapsed Multiple Myeloma: Guidelines From the Mayo Stratification for Myeloma and Risk-Adapted Therapy. Mayo Clin Proc 92(4): 578-598.
21. Pérez-Persona E, Vidriales MB, Mateo G, Ramón García-Sanz, Maria-Victoria Mateos, et al. (2007) New criteria to identify risk of progression in monoclonal gammopathy of uncertain significance and smoldering multiple myeloma based on multiparameter flow cytometry analysis of bone marrow plasma cells. Blood 110(7): 2586-2592.
22. Cosemans C, Oben B, Arijs I, Daniëls A, Declercq J, et al. (2018) Prognostic Biomarkers in the Progression From MGUS to Multiple Myeloma: A Systematic Review. Clin Lymphoma Myeloma Leuk 18(4): 235-248.
23. Sigurdardottir EE, Turesson I, Lund SH, , Ebba K Lindqvist, Sham Mailankody, et al. (2015) The role of diagnosis and clinical follow-up of monoclonal gammopathy of undetermined. significance on survival in multiple myeloma. JAMA Oncol 1(2): 168-174.
24. Bianchi G, Kyle RA, Colby CL, Dirk R Larson, Shaji Kumar, et al. (2010) Impact of optimal follow-up of monoclonal gammopathy of undetermined significance on early diagnosis and prevention of myeloma-related complications. Blood 116(12): 2019-2025.

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