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An audit to evaluate the knowledge and attitude of Iranian medical specialists towards Oral Nutritional Supplements

Mojtaba Shafiee[1#], Mahmoud Belghaisi-Naseri[1#], Najmeh Seifi[1], Seyed Mostafa Arabi[1], Abdolreza Norouzy[1,2*]

[1]Department of Nutrition, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran
[2]Department of Nutrition, Faculty of Medicine, Tehran University of Medical Sciences, Tehran, Iran

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A B S T R A C T

Background: Disease related malnutrition (DRM) has been an important problem in all health care settings for many years and is associated with an increased risk of adverse clinical outcomes. Nutritional interventions with ONS are associated with fewer numbers of hospital admissions and shorter duration of hospital stay. The objective of the present study was to investigate the knowledge and attitude of medical specialists regarding ONS prescribing practices.

Methods: Total samples of 120 medical specialists were recruited from two hospitals in northeastern Iran. Sixty medical specialists from Imam Reza Hospital and sixty medical specialists from Ghaem Hospital were randomly selected. A questionnaire was administered by face-to-face interview to each participant.

Results: Only a small number of medical specialists reported the use of screening tools to ascertain whether a patient requires ONS. Both medical specialists in Imam Reza (44%) and Ghaem (36.8%) hospitals reported increased prescription of ONS in recent years. Only 38.5% of the medical specialists said that they would monitor the patient after prescribing ONS. Only 32.9% of medical specialists stated that they have received training on use of ONS in the past. Around 41% of medical specialists stated that they have no idea about the calorie content of a standard 200 mL carton of ONS.

Conclusion: The results of the present study raise concerns regarding the appropriateness of current ONS transcriptions among hospitalized patients. Therefore, there is a need for targeted educational interventions for medical specialists in order to promote the use of ONS in hospitalized patients.

Introduction

Disease related malnutrition (DRM) has been an important problem in all health care settings for many years and it continues to be a growing major public health concern due to the ageing of the world's population (1, 2). DRM is associated with an increased risk of adverse clinical outcomes as well as with a detrimental physiological and clinical effects, delaying recovery from illness, and impairing quality of life (1, 3). It has been suggested that DRM doubles the risk of mortality in hospitalized patients and also triples in-hospital and post-hospital mortality in elderly patients (4, 5). The reported burden of DRM varies depends on the sample and tools used, but it is estimated to affect approximately 25–50% of patients admitted to hospitals (6). Moreover, the annual costs of DRM in United Kingdom, Germany, Netherlands and Ireland has been estimated to be € 15 billion (2007), € 9 billion (2006), € 1.9 billion (2011) and € 1.4 billion (2009), respectively (7-10).

Corresponding author:
Abdolreza Norouzy, Department of Nutrition, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; Email: NorouzyA@mums.ac.ir
# Equally contributed as first author

In a randomized, double-blind, placebo-controlled study conducted by Gariballa et al., oral nutritional supplementation of acutely ill patients receiving a normal hospital diet improved nutritional status and significantly reduced the number of non-elective readmissions (11). A systematic review and meta-analysis of the impact of ONS on hospital readmissions also showed that ONS significantly reduce hospital readmissions, particularly in older patient groups (12). It has been reported that the appropriate use of ONS is associated with fewer number of hospital admissions and shorter duration of hospital stay which results in enormous economic benefits (13). Norman et al. conducted a randomized controlled pilot study to investigate whether post-hospital supplementation with ONS is cost-effective. After a 3-month intervention with ONS, the authors found that not only supplementation with ONS is cost-effective according to international benchmarks but it also increases quality of life in malnourished patients (14). Thus, nutritional interventions with ONS have a considerable impact on health-care system and are beneficial for malnourished patients either in community settings or within a healthcare environment. To best of our knowledge, there are limited reports in the literature regarding the knowledge and attitude of medical specialists towards oral nutritional supplements. We therefore aimed to investigate the knowledge and attitude of medical specialists from both Imam Reza and Ghaem hospitals regarding ONS prescribing practices.

Subjects and methods

Study population

Total samples of 120 medical specialists were recruited from two hospitals in northeastern Iran. The number of medical specialists form each unit was based on the unit size. To this extent, sixty (50%) medical specialists (10 Cardiologists, 10 Internists, 5 Oncologist, 5 Urologists, 5 Otolaryngologists, 5 Dermatologists, 5 Surgeons, 5 Pediatricians, 5 Burn specialists and 5 Orthopedists) from Imam Reza Hospital and sixty (50%) medical specialists (15 Neurologists, 10 Cardiologists, 10 Internists, 5 Urologists, 5 Otolaryngologists, 5 Dermatologists, 5 Surgeons, and 5 Pediatricians) from Ghaem Hospital were randomly selected. The Ethics Committee of Mashhad University of Medical Sciences (MUMS) advised that formal approval is not required for this non-invasive anonymized study.

Questionnaire

A modified version of the questionnaire used by Loane et al. (15) was administered by face-to-face interview (duration 10–15 min) to each participant (Appendix 1). The questionnaire was divided into six sections, namely: information on general prescribing practices; decision making processes involved in selection of patients requiring ONS; factors affecting choice of ONS; monitoring procedures for patients who have been prescribed ONS; training received in the use of ONS and the influence of sales representatives on subjects. A short vignette was also included in section C and medical specialists were asked to answer a series of questions.

Statistical analysis

Data analysis was carried out using SPSS-18 software (SPSS Inc., IL, USA). Pearson's chi-square test was used to determine differences between categorical data. Student's t-test was applied to compare the percentage of prescribing ONS between two hospitals.

Results

A response rate of 70% (42) medical specialists in Imam Reza hospital and 63% (38) medical specialists in Ghaem hospital was achieved. There would be a potential bias with the response rate, since low response rate may reflect the lack of awareness towards oral nutritional supplements among Iranian medical specialists.

Prescribing practices

The majority of medical specialists (67.5%) declared that they have prescribed an ONS at least one time for a hospitalized patient. As indicated by medical specialists, less than 9.0% of hospitalized patients receive ONS and there was no significant difference between two hospitals (p=0.2). The three most common conditions that medical specialists prescribed ONS for were inadequate intake (18.6%), malnutrition (16.2%), and weight loss (13.2%) (Figure 1). The majority of medical specialists (71.2%) indicated that they themselves were responsible for supplement recommendations within their practice. Dietitians were responsible for other 28.8% of ONS recommendations. When asked if they prescribe ONS when recommended by another health professional, 55.7% (44) of medical specialists said "Always", 19% (15) said "Often", 17.7% (14) said "Sometimes", and 7.6% (six) said "Never". Around 95% (74) of medical specialists indicated that they have no specific screening tool to ascertain whether or not a patient requires ONS. Only a small number of medical specialists reported the use of screening tools such as

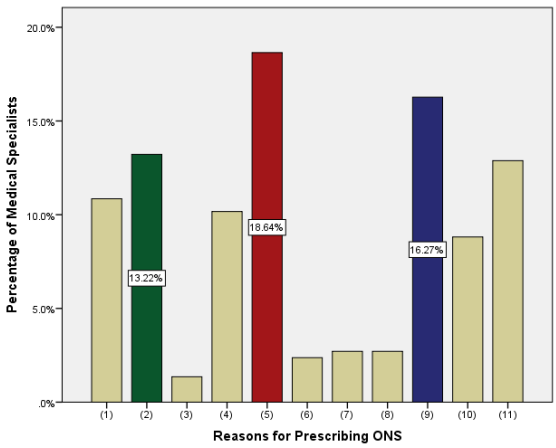

Figure 1. Reasons for prescribing ONS among medical specialists in both Imam reza and Ghaem hospitals. (1) Body mass index less than 18.5; (2) Weight loss; (3) Small bowel syndrome; (4) Malabsorption; (5) Inadequate intake; (6) Before surgery for patients with malnutrition; (7) Inflammatory bowel disease; (8) Dysphagia; (9) Malnutrition; (10) Trauma and wound; and (11) Other reasons.

subjective global assessment (SGA) and Malnutrition Universal Screening Tool (MUST) for this purpose.

The three most common factors which influence ONS prescription by medical specialists were: (1) brand/type of ONS (40.6%), (2) price of ONS (28.1%), and (3) calorie content of ONS (21.9%). Only 16.7% of medical specialists declared that they taste the products presenting by sales representatives. Moreover, only 36% (15) of medical specialists in Imam Reza hospital and 11% (four) of those in Ghaem hospital stated that they let the patients taste ONS before prescribing. There was a significant difference *between two* hospitals in this regard (p=0.02).

Reasons for increase in ONS prescription

About 44% of medical specialists in Imam Reza hospital and 36.8% in Ghaem hospital reported that they had increased prescription of ONS in recent years. The reasons stated for this increase were: (1) Increased quality of ONS (25.8%), (2) Improved outcomes with prescribing ONS (22.6%), (3) Increased awareness of the benefits of ONS (19.4%), (4) Presence of dietitians (12.9%), (5) Vulnerability of specific groups such as infants (12.9%), and (6) Advertisements (6.5%).

Dietary advice given by health professionals

When asked if medical specialists give patients any dietary advice other than recommending, 43.6% (34) of medical specialists said "Yes", 10.3% (eight) said "No", 29.5% (23) said "Sometimes", and 16.7% (13) said "No idea". The most common types of dietary advice given were: (1) Healthy eating (76.9%), (2) High protein/high energy (10.3%), and (3) Increased liquid consumption (7.7%).

Monitoring

Only 38.5% of the medical specialists said that they would follow up the patient after prescribing ONS. Methods used by medical specialists to review patients include: clinical (40%), anthropometry (26.7%), medical history and physical exam (13.3%), diet history (10%), and biochemistry (10%) (Figure 2). When medical specialists were asked after what length of time you would ask patients to return, 53.3% (16) said after 3–4 weeks, 26.7% (eight) said after 2 months, 6.7% (two) said after 1–2 weeks, and 13.3% (four) said it depends on the patient's condition.

Education and training

Only 32.9% (26) of medical specialists (43.9% in Imam Reza hospital vs 21.1% in Ghaem hospital) stated that they have received training on use of ONS in the past. Of these 52% (13) received their training from seminars, 40% (10) from book and guidelines, and 8% (two) from university. Seventy-eight percentage (32) of medical specialists in Imam Reza hospital and 71% (27) in Ghaem hospital said they would like to know more about ONS. However, 22.8% (18) of medical specialists indicated that they have no interest to receive further training. The aspects of ONS that medical specialists would like to know more were: amount and duration of prescription (31.4%), indications and contraindications (28.6%), types of ONS (22.9%), and potential interactions and side effects (17.1%).

Knowledge

Around 42% of medical specialists in Imam Reza hospital and 40% in Ghaem hospital stated that they have no idea about the calorie content of a standard 200 mL carton of ONS. Thirty-two percentage (25) of medical specialists (37% in Imam Reza hospital vs 27% in Ghaem hospital) chose the correct value of 200–300 kcal. About 73% (30) of medical specialists in Imam reza hospital and 37% (14) in Ghaem hospital have been visited by a sales representative from a nutrition company and there was a significant difference between two hospitals (p=0.004). Seventy-five percentage (39) of medical specialists indicated that sales representatives have left samples of ONS with them. The majority of medical specialists (76%) in both hospitals declared that they give these samples to patients. Around 24% of medical specialists stated that they keep these samples for better

introducing them to patients. When asked if medical specialists think the majority of patients take the ONS prescribed for them, 36.7% (29) of medical specialists said "Yes", 8.9% (seven) said "No", and 54.4% (43) said "Don't Know".

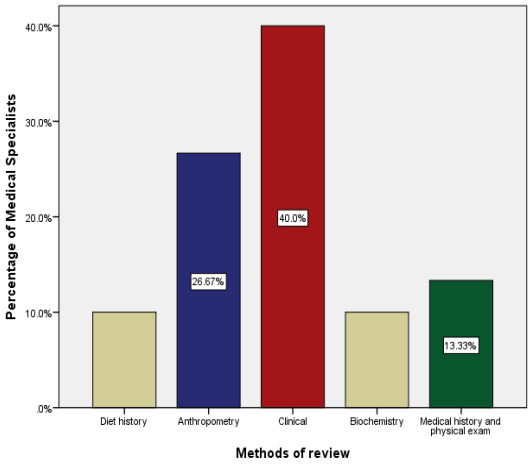

Figure 2. Methods used by medical specialists to review hospitalized patients.

Discussion

This study found that both medical specialists and dieticians are involved in the identification of hospitalized patients who require ONS. However, less than 30% of medical specialists introduced dieticians as the main responsible for supplement recommendations. About 42% of medical specialists had no idea about the calorie content of a standard 200 mL carton of ONS. Moreover, only 32.9% of medical specialists in both Imam Reza and Ghaem hospitals have received training in the use of ONS.

The condition for which medical specialists most frequently prescribe ONS was inadequate intake. Since decreased food intake represents an independent risk factor for mortality in hospitalized patients (16), it appears that medical specialists are aware of the risks associated with inadequate dietary intake. Malnutrition is also accompanied by higher complications and increased mortality (17) and it was identified as the second main reason for prescribing ONS. Considering the significant beneficial effects of nutritional interventions on wound healing (18, 19), It was expected to have higher number of medical specialists prescribing ONS with the purpose of wound healing. Only a limited number of medical specialists declared that they prescribe ONS for patients prior to surgery; however, it is now well established that perioperative supplements in patients submitted to surgery are associated with better recovery of plasma proteins and less postoperative complications, and is cost-effective (20, 21). Loane et al. reported that the conditions for which general practitioners most frequently prescribed ONS were weight loss and palliative care (15). The authors also found that public health nurses recommend ONS to be prescribed for wounds, ulcers or pressure sores to a greater extent than general practitioners (15).

The majority of medical specialists had no specific screening tool to ascertain whether or not a patient requires ONS. However, the guidelines suggest that prior to consideration for commencing oral nutrition support or ONS, the patient' risk of malnutrition should be assessed using a screening tool (i.e. MUST) (22). In another study, Nutritional Screening Tool (NST) developed by Ward et al. (23) was the most screening tool used by public health nurses in order to decide whether a patient requires ONS (15). Clinical and anthropometric methods were the most widely used methods of reviewing patients among medical specialists. Similar results were obtained in another study, were anthropometry was the main method of review for both general practitioners and public health nurses (15).

According to guidelines, all patients receiving ONS should be monitored by a health care professional and when goals of treatment are met ONS should be discontinued (22). Since only 38.5% of medical specialists monitor the patients after prescribing ONS, there is a lack of knowledge with regard to the importance of monitoring patients on ONS. Moreover, more than 40% of medical specialists had no idea regarding the calorie content of a standard 200 mL carton of ONS and there was an inconsistency in the number of cartons recommended per day by specialists in both Imam Reza and Ghaem hospitals. These observations, together with dramatic increase in prescription of ONS in recent years indicated by medical specialists raise concerns regarding the appropriateness of ONS prescribed for hospitalized patients. Kennelly and colleagues investigated ONS prescribing practices among health professionals in the community setting and found most of the ONS prescribed in accordance with the prescribing criteria. However, according to MUST criteria, around 40% of patients who were prescribed ONS were at low risk of malnutrition (24).

Considering the low percentage of medical specialists who received training on use of ONS,

there is a need for nutrition education among medical specialists to ensure that ONS are appropriately prescribed and patients are monitored effectively. Kennelly et al. reported that an educational intervention, incorporating MUST, is successful in increasing the knowledge of health professionals regarding oral nutritional supplements and improve the management of malnourished patients in the community (25, 26). In another study, a community dietetics intervention among general practitioners and nurses significantly improved ONS prescribing practices in accordance with best practice guidelines (27). Therefore, nutrition training to medical specialists is necessary in order to ensure that malnutrition is detected and treated effectively and no more ONS are prescribed inappropriately.

A relatively large sample size of medical specialists from different units of two big hospitals in northeastern Iran and administering questionnaire with face-to-face interview were major strengths of this study. We acknowledge some limitations in our study, including: (a) no direct assessment of patients who had been prescribed ONS, and (b) relatively low response rate (67%) which may have affected the findings.

Conclusion

The findings of the present study suggest that there is a need for targeted educational interventions for medical specialists in order to promote the use of ONS in hospitalized patients. As mentioned earlier, a majority of medical specialists have a tendency to know more about oral nutritional supplements. These nutritional educations could have considerable direct and indirect benefits for the health care system, if medical specialists can detect malnutrition and manage it at early stages.

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Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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