Guidelines in oncology

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Guidelines are important tools in relation to patient treatment and care in oncology. They are systematically developed statements to assist practitioner- and patient-decisions about appropriate health care for specific clinical circumstances. They are needed because of unexplained and inappropriate variations in clinical practice patterns, different cancer treatment outcomes, further limitations in resources affecting administration of high quality health care, difficulties of integrating rapidly evolving scientific evidence into daily clinical practice, guidance for involved stakeholders and quality control. A guideline development programme should be inclusive, transparent, consultative, evidence-based and adhering to internationally recognised standards of practice such as the AGREE Collaboration. There should be an implementation plan to ensure that guidelines are implemented in daily clinical practice since they have an important influence on cancer outcome. This article reviews the need, development, implementation, adherence and outcome of guidelines.
(Belg J Med Oncol 2012;6:112-117)

Introduction

Guidelines are defined as statements or other indications of policy or procedures by which to determine a course of action.[1] They were mainly used by the industry to improve the performance of complicated tasks. In medicine, clinical practice guidelines are systematically developed statements to assist practitioner- and patient-decisions about appropriate health care for specific clinical circumstances.[2]

The aims of guidelines in medicine are to guide decisions and criteria regarding prevention, diagnosis, management and treatment in specific areas of healthcare. Guidelines should not be followed without clinical judgment or reflection, but can be used to facilitate decisions in daily clinical practice.

Need for guidelines

Guidelines are needed in oncology for several reasons. First of all, unexplained and inappropriate variations occur in clinical practice patterns and different cancer treatment outcomes and these may be improved by guidelines. In 2009, a report by the Federaal Kennis Centrum voor de Gezondheidszorg (Federal Knowledge Centre for Health Care,KCE) showed that there was a wide variation in cancer treatment outcomes for breast cancer (Figure 1) among different institutions and some of them had 2-year breast cancer mortality rates outside the 99% confidence interval around the mean.[3]

Secondly, the increasing limitations in resources for health care will affect administration of high quality health care. There will be a demographic shift with an increase in elderly people.[4] Since cancer is mainly a disease of the elderly, the number of cancer patients will thus increase. The health-related costs are increasing with age from less than 10% of the Gross Domestic Product (GDP) per Capita for patients aged below 60 years to more than 20% of the GDP per capita in men older than 80 years.[4] The demographic shift will thus be putting a high burden on the health budget with an increase of health-

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Conflict of interest: this article is based on a presentation given by the author at a symposium sponsored by Novartis.

Keywords: guideline, oncology, development, adherence, outcome.

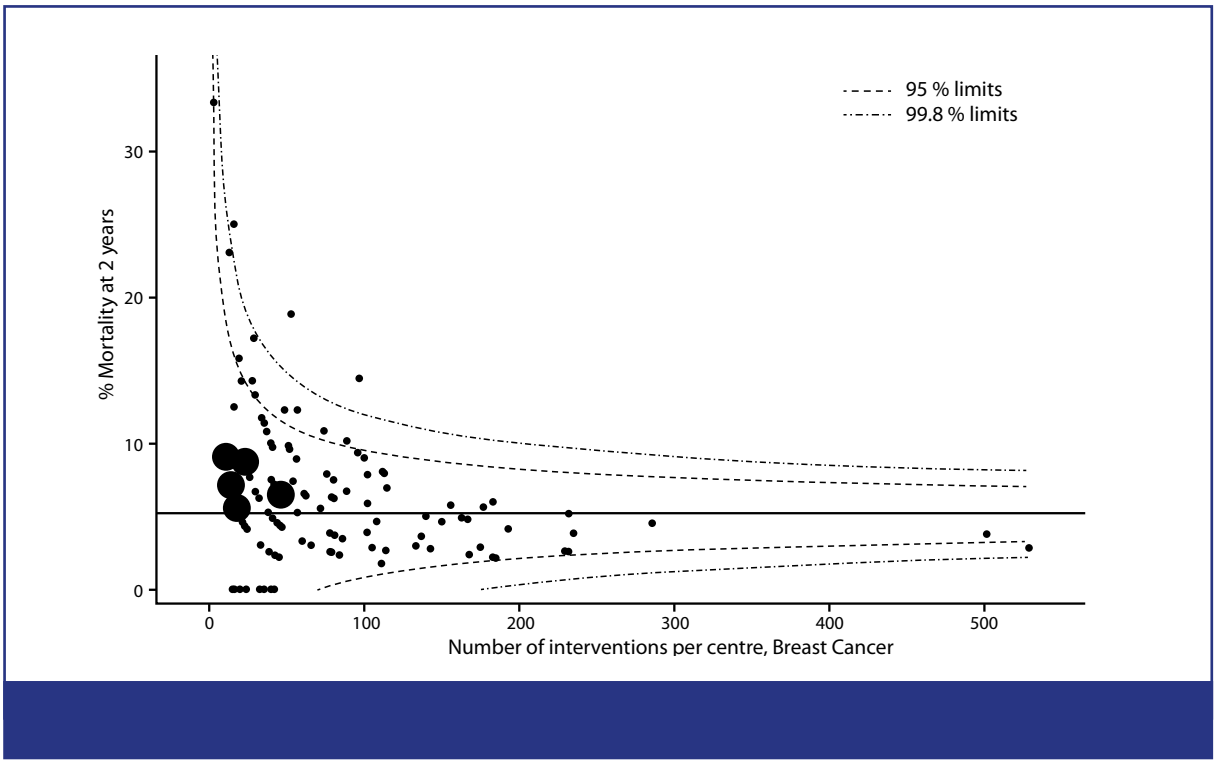

Figure 1. Breast cancer surgery: Funnel plot of 2-year mortality rate, by hospital (KCE report-113A)

related cost by 2-7% depending on the scenarios.[5] Furthermore, guidelines can be used to integrate the rapidly evolving scientific knowledge in oncology into daily clinical practice. In oncology, the evolution of new medications and treatments is rapid with several potentially practice changing phase III studies in different parts of the world. The number of phase III studies in the clinical cancer trails registry of the National Cancer Institute of the USA ranged from 30-115 in the major tumour types such as breast, lung, colorectal and prostate cancer.[6]

In addition to this, guidelines are needed for guidance of all involved stakeholders such as health professionals, patients and carers, industry, health care providers, or policy makers.

Last but not least, guidelines can be used as tools for quality control.

Purpose of guidelines

The purpose of guidelines in oncology should be the improvement of quality of patient care and health care outcomes, transparency of clinical decision making, the promotion of efficient use of resources and prioritisation of research goals.[2]

They should deal with significant health problems and significant health benefits, lead to a reduction of disease, suffering, disability and premature death resulting in a rational use of health-related resources.[7]

Guideline life cycle

Up-to-date guidelines have a life cycle of development, dissemination, implementation and evaluation. The first step in the guideline process is to select a certain clinical problem and to generate an evidence-based recommendation. The evidence should be ratified and a practice guideline should be formulated. This guideline is reviewed by an independent review board and practice policies are negotiated by the guideline development group. The organisations should adopt the guideline and develop policies for implementation. The guideline should regularly be reviewed and updated.

Guideline development

A guideline development programme should be inclusive, transparent, consultative, evidence-based and adhere to internationally recognised standards of practice such as the AGREE Collaboration.[7]

Inclusive

A guideline development programme should involve all stakeholders in a transparent and collaborative manner. Stakeholders can be organisations of patients and health care professionals, academic and non-academic health care professionals, funding organisations and companies with an interest in the guideline.[8]

Transparent

The members of the guideline development group should declare any conflict of interest they may have in relation to the guideline that is developed. Conflict of interest can be personal (e.g. consultancies, fee-paid work, shareholding) or non-personal (e.g. benefits for department or organisation) such as fellowships or support by the health care industry.

Consultative

The guideline should be familiar to and available to possible stakeholders such as health care professionals and patients. The guideline can be distributed to journals, by the intra- or internet. Guidelines should be easily accessible at the workplace but also at home. The organisation producing the guideline can ask for registration or put the guideline on a password protected site. It can also charge a fee for the guideline although free consultations should be encouraged.

Evidence-based

Evidence-based medicine is defined as conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. It aims at integrating individual clinical expertise with the best available external clinical evidence from systematic research.[9]

Evidence-based information is in many circumstances not available in relation to the entire guideline and parts of the guideline are based on expert consensus due to gaps in high-quality evidence.

Level of evidence

Evidence is classified according to different levels. Level I is evidence based on meta-analysis of multiple, well-designed, controlled studies, level II evidence is based on at least one well-designed experimental study (randomised controlled trial), level III evidence is evidence from well-designed, quasi-experimental studies (non-randomised, controlled single-group, pre-post, cohort, and time or matched case-control), level IV evidence is based on well-designed, non-experimental studies (comparative and correlational descriptive and case studies) and level V is based on case reports.[10]

Grade of recommendation

Grade of recommendation gives the strength of the recommendations and is dependent on the level of evidence of the data. Grade A recommendations are based on evidence of level I or consistent findings from multiple studies of types II, III, or IV level evidence, grade B depends on evidence of level II, III, or IV and findings are generally consistent, recommendations grade C were formulated based on evidence of level II, III, or IV but findings are inconsistent, while for grade D recommendations there is little or no systematic empirical evidence.[10]

Adherence to the Agree collaboration evaluation system

The Appraisal of Guidelines Research & Evaluation (AGREE) Instrument is a framework for assessing the quality of clinical practice guidelines. It consists of 23 items in six domains.[11]

- The scope and purpose of the guideline describes the overall aim of the guideline, its specific clinical questions and the target patient population.
- Stakeholder involvement describes the extent to which the guideline represents the views of its intended users.
- The rigor of development process should be described with the methods to gather and synthesise the evidence and the formulation of the recommendations. Also the method of updating the guideline should be clearly lined out.
- The clarity and presentation of the guideline should be evaluated looking at the language and format of the guideline.
- The applicability and the likely organisational, behavioural and cost implications of applying the guideline should be stated.
- The editorial independence should be clear ensuring the independence of the recommendations and acknowledgement of possible conflicts of interest.

Several national and international organisations are

Table 1. Adherence to guidelines

Author (year)	Reference	Guidelines	N°	Adherence (%)
Flemish Authority (2011)	12	Breast cancer screening	715,106 women	46
Chopard (2008)	13	Thrombosis	2,000 pts	61
Coxon (2003)	14	Urology cancer referral	269 pts	13
Hermens (2001)	15	Cervical cancer screening	988 general practices	20-95

N°: number, pts: patients

developing oncology guidelines such as the KCE, the European Society for Medical Oncology (ESMO), the American Society of Clinical Oncology (ASCO), National Cancer Institute (NCI), the National Comprehensive Cancer Network (NCCN), the State of the Art Oncology in Europe (START) and the National Institute for Health and Clinical Excellence (NICE). Only the NICE guidelines meet all AGREE criteria for guideline development. How-ever, there is a high level of scientific agreement among the different guidelines.[2]

Dissemination of the guideline

Each guideline should be accompanied by a dissemination plan defining the target group and the benefits, the responsibility of implementation and communication strategy, the use of available communication networks, and the message, format and support for guideline implementation.

Implementation of the guideline

Key priority for guideline implementation is, that the health care system supports guideline implementation in organisation and funding. In addition, the professional organisations should promote guideline use and health care professionals should be educated and trained to implement guidelines. Also, it is of vital importance that stakeholders are informed about guidelines.

Barriers of guideline implementation are the lack of knowledge of the topic of the guideline, attitudes towards guidelines in relation to change, the development group and the validity of guidelines and the magnitude of behavioural changes implied by the guideline.

Other known barriers for guidelines implementation are that the health care professional does not know or forget about the guideline, does not agree with the guideline, has psychological fears that the patients will not like the guideline, limited resources in relation to time, money and skills, organisational issues with barriers to change, number of persons/ departments/ institutions involved, number of participants necessary to implement the guideline and the magnitude of change.

Strategies that are consistently effective for guideline implementation are educational outreach visits, reminders, interactive educational meetings and multifaceted interventions; strategies that are variably effective are audit and feedback, involvement of local opinion leaders, local consensus process and patient-mediated interventions, while educational materials or didactic educational meetings have little or no effect.

Key messages for clinical practice

- Guidelines are useful tools to guide clinicians in their daily clinical practice.
- Guidelines should be developed and implemented according to internationally recognised methods.
- Adherence to guidelines should be envisaged during the development process as this has an impact on health-related outcomes.

Table 2. Impact on Outcome of Guideline Adherence

Author (year)	Reference	Tumor type/stage	N° pts/type	Adherent vs non-adherent
Varga (2010)	16	Breast/early	1,778	Improved RFS
Improved OS	13	Thrombosis	2,000 pts	61
Morris (2007)	17	Breast/early	12,961	Improved OS
Sijmons (2007)	18	Ovary/early	125	Improved OS
Gajdos (2001)	20	Breast/early	1,126/elderly	Similar RFS

N°: number, pts: patients, RFS: relapse-free survival, OS: overall survival

Problems of guideline development

Several problems are encountered in the development of guidelines.

Since most guidelines are based on randomised studies, the applicability to individual patients with co-morbidities is sometimes difficult. Recommendations of internationally developed guidelines are sometimes not applicable because of national/regional differences in health care resources, the health care structure, the availability of diagnostic techniques or medication. Also attitudes to towards guidelines both by the professional health care give and by the patient and caregiver may be hurdles to implement a guideline.

Guidelines in practice

Table 1 shows information of adherence to practice guidelines. Adherence may vary among different groups but for screening purposes, adherence should be at least 80%.

The impact of adherence to guidelines was shown in several studies showing better treatment outcomes in relation to symptom control, relapse-free and overall survival *(Table 2)*.

Conclusion

Guidelines are useful tools to guide clinicians in their daily clinical practice. They should be developed and implemented according to internationally recognised methods. Adherence to guidelines should be envisaged during the development process. Adherence to guidelines has an impact on health-related outcomes.

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