Quality Assessment in Preventive Medicine

Programs of preventive medicine undergo comprehensive evaluation for safety and efficacy. However, the fact that a disease preventive program or procedure is found efficacious and safe is no guarantee that it will be used appropriately. The quality of implementation must also be assessed by examining the extent to which the procedure is used judiciously, skillfully, and appropriately. This assessment will determine to what extent the criteria and standards of the evaluated procedure were observed and the extent to which effectiveness matches efficacy in practice or can be made to match it. As in other medical disciplines, quality assessment in preventive medicine proceeds in two steps. The first step consists of collecting information on the procedure as implemented in practice and its outcome. Next comes the identification and interpretation of patterns of performance from the information obtained, characterizing both good and questionable practice. Following these two steps intervention to correct disclosed deficiencies can be initiated and subsequently the effectiveness of the corrective action undertaken verified. Quality assessment may be applied to all levels of disease prevention and health promotion. We will focus on activities of secondary prevention: preventing avoidable death, early detection of malignancy, cessation of smoking, prevention of stroke, detection and control of high blood pressure and other risk factors for cardiovascular and cerebrovascular disease.

The concept of avoidable death has been extensively explored, e.g., perinatal mortality, for which routine statistical information is widely collected on an international basis. In Europe it ranges from 6.3/1,000 in Finland, 8.1/1,000 in Norway, 8.4/1,000 in Denmark, to 12.8/1,000 in Greece and 15.5/1,000 in Portugal (1). The perinatal mortality in a large medical center in Mexico was 24.8/1,000 births (2). Quality assessment of perinatal care disclosed structural and process deficiencies in the quality of care and quantified its effect on death preventability independently of biological and socioeconomic factors. Corrective intervention resulted in improved quality of care, which prevented avoidable death and reduced the perinatal mortality by 35% (2).

Prevention of cervical cancer is a well-known concern and screening for this disease is an important preventive activity with proven health benefits. In countries with well-organized programs, such as Sweden, it decreased mortality due to cervical cancer by 60% (3). A high level of participation and adequate follow-up are essential in the organization of the screening. Quality assessment found that computerization of data, more intensive support for practices, and the delegation of many clinical tasks to practice assistants, improved the effectiveness of the population-based program (4). Cervical smear is considered the best test for early detection of cervical lesions but is criticized for its quality from a technical point of view, i.e., errors in sampling by the physician and faulty preparation in the laboratory. Substantial false negative rates are common, mainly due to poor test quality or sampling problems. There is increasing evidence of serious deficiencies in the quality of care in rural areas and upon assessment, the quality of smear sampling accordingly proved to be lower in these areas. Coverage was also inadequate. Quality improvement activities were successful in improving cervical smear quality and coverage quality (5).

Breast cancer is the leading cause of death in women aged 35-54 years, and the most common cause of cancer death among women (6). There is evidence of the value of the combination of clinical examination and mammography in early detection. A recently performed study has shown that in 22 developed countries, all population-based screening or surveillance programs operate under strict quality control standards (7). However, these standards pertain exclusively to the technical aspects of the examination and do not relate to its acceptability to women. Quality assessment of the procedure must include its acceptability by and the satisfaction of the examinees, since effectiveness of mammography depends also on the women's participation and re-attendance rate (8). A quality assessment in Norway showed that making breast compression by the apparatus less painful and improving knowledge about the procedure and trust in it, increased women's acceptance of mammography and enhanced its effectiveness (9).

Tobacco use is the most common life-threatening risk behavior resulting in preventable death in the Western world. Decreasing the prevalence of smoking is a high preventive medical priority. Population strategies play an important role and include legislation ban on tobacco advertising, higher taxation, and
restriction of smoking in public places. There is also evidence that the advice and support given to smokers by health care professionals in primary care settings contributes to the decrease in smoking (10) and can achieve abstinence in 5-30% of smokers, depending on the intensity of the intervention program (11). It is, therefore, disappointing that the number of individuals who report receiving advice from health care professionals on how to stop smoking is low (12). A systematic review of randomized controlled trials has shown that quality assessment and subsequent improvement activities may be effective (13). These focused on training health professionals to provide smoking cessation advice, which led to a measurable impact on their performance as well as a modest effect on outcome. Providing reminders to professionals to offer advice to their patients and encouraging them to use nicotine replacement therapy, as an adjunct to their advice, enhanced the effect of training (13).

Oral treatment with the anticoagulant warfarin has been evaluated as efficacious in preventing thromboembolic stroke due to atrial fibrillation or prosthetic heart valve. However, its therapeutic range is narrow and if not given appropriately, the drug may be of no benefit or even carry serious risk. Quality assessment was conducted on 110 patients, for whom warfarin was prescribed, 58 with prosthetic valves, and 52 with atrial fibrillation. It disclosed that only in 32% of patients did the medication achieve blood values within the therapeutic range, with 52% below and 16% above it. These findings showed the need for multidimensional improvement in the procedure to increase its safety and effectiveness. After the first phase of corrective intervention, 43% of medication levels were brought within the therapeutic range (14).

Coronary heart disease is an important cause of serious morbidity in the Western world. In the UK, the secondary prevention targets are the increase in the prescription of aspirin, beta-blockers, statins, and inhibitors of angiotensin-converting enzyme (ACE inhibitors) for 80-90% of patients with established coronary heart disease. Large studies showed these drugs to be efficacious, but quality assessment of their use after acute myocardial infarction reported widespread underuse, with cholesterol targets largely not achieved, beta-blockers discontinued, and ACE inhibitors frequently remaining administered at too low doses (15).

Risk factors for cardiovascular disease are well-known and so is the importance of its primary and secondary prevention. The implementation of guidelines for these preventive activities should be one of the principal commitments of the general practitioner. In Finland, the prevalence of cardiovascular disease is high and the opportunities for prevention good, since 85% of the population visits a general practice every year for a checkup (16). Quality assessment of the preventive activity in Finnish general practice, however, showed that documentation of risk factors in patients’ charts was poor. Corrective intervention resulted in its improvement regarding two risk factors — blood glucose and cholesterol concentrations. Quality assessment of this preventive measure in Israel also revealed disappointing results. Nearly 5,000 individuals registered with 30 general practices were examined and followed up. Only 33% were considered “controlled for hypertension”, target organ damage was found in 36% (most commonly ischemic heart disease), and only 32% of the registered hypertensive individuals had low-density cholesterol below the recommended concentrations.

Blood glucose concentrations in hypertensive individuals with diabetes were far from optimal, and only 5% were considered “diabetic-controlled” (17). Poor control is also largely present in the United States and in Europe (18,19). Poor patient compliance may be partly the reason for this situation, but several studies showed that physicians are responsible for the inadequate control of these risk factors. They may not be fully aware of new recommendations, do not record levels of the risk factors, and do not follow the response of these factors to the prescribed treatment (17).

Thanks to the long-term relationship between general practitioner and patient and the ensuing trust between them, the former is in a key position to advise individuals in their care regarding the implementation of some principles of preventive medicine, such as physical activity, appropriate nutrition, and the cessation of smoking. In practice, quality assessment reveals that the number of sessions devoted to prevention is very small and that the extent to which preventive and promotive advice is integrated into general practice is very low (20). Chronic cough related to smoking requires the physician to inform the individual that his or her condition is smoking-related, that smoking is harmful and cessation beneficial, and to provide advice on how to stop smoking. Quality assessment showed that only in 49% of cases was a preventive message given. This is unacceptably low, since every physician should integrate preventive and promotive health care into clinical practice (21). Better dissemination and use of guidelines have been useful in improving the situation (22).

The examples presented illustrate that it is not possible to rely only on the results of efficacy and safety evaluations of preventive medicine procedures and programs. It is necessary to assess the quality of the technical component as well as the interpersonal aspect of performance of providers as they implement these activities for individuals and communities.

References


