Gathering meaningful outcomes in interventional trials in general practice

Primary Care Alliance for Clinical Trials (PACT) network

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In Australian general practice there is an increasing realisation that we need information on outcomes that really matter to clinicians. As a matter of priority, general practitioners and other primary care health providers need and want researchers to find solutions to clinically important questions.[1] This may vary from outcomes related to the use of antibiotics for common everyday conditions,[2] to information regarding tiredness,[3] the value of decision support to improve hypertension and cardiovascular risk management,[4] and how to discuss the difficult issues of death and dying.[5] The complexity of everyday clinical care demands that trials are completed in real practice settings,[6] not extrapolated from hospital based studies with rigidly controlled patient inclusion and exclusion criteria.

There is a growing movement in the evidence based medicine world to talk about patient oriented endpoints (POEMs) that matter. Most outcomes are chosen by study investigators rather than by patients and/or the GPs who would have to implement any new evidence. Intervention trials in general practice would benefit from drawing the patients and nonacademic GPs into the research process. There is evidence that clinicians and patients differ in their expectations.

A sharp contrast in what was considered important was demonstrated in a study of physician assessment of disability in patients with multiple sclerosis. There was a correlation of 0.87 between the physician assessment of physical disability, but the physical disability did not correlate with the quality of life measures.[7] Patients rated their vitality, mental health and general health as being more important than the physical disability (considered important by the physicians). It is therefore possible to imagine a randomised trial of a new medication for multiple sclerosis being lauded as a wonder drug for physical disability yet not being wholeheartedly welcomed by patients.

Including quality of life measures in studies is one means of ensuring such discrepancies do not occur.[8] Before the 1980s there were few studies that examined quality of life; extension of life was considered sufficient. However, for many patients the extension of life may be offset by adverse effects and balancing these issues has become of greater interest. For example, in studies of chronic obstructive pulmonary disease, improvements in peak flow have not been accompanied by an improvement in quality of life measures.[8] The disadvantage of quality of life measures is that they generally give continuous outcomes rather than discrete outcomes.[9] The advantage of discrete outcomes is that numbers needed to treat can be calculated from them and these seem to be of value to doctors (they may or may not be of value to patients).

What other concepts can we use? One study examined the concepts of 'absolute risk', 'relative risk' and 'numbers needed to treat'.[10] Patients were told that if they took a cholesterol lowering drug every day they would get a 34% reduction in myocardial infarction. Eighty-eight percent of patients would consider taking it. When this was expressed as an absolute risk reduction, ie. the risk of acute myocardial infarction would fall from 3.9% to 2.5%, only 42% would consider taking it. When the same reduction was expressed as a numbers needed to treat (NNT) of 71 patients for 5 years, only 31% would consider taking it. These findings suggest that NNT is a very conservative means of expressing benefit to patients.

There has been some validation work done on 7-point Likert scales which have shown that a change of 0.5 is equivalent to a NNT of 2–5, but such conversions are somewhat unsatisfactory.[11] Guyatt et al[9] have a solution to this problem. Their suggestion is to estimate the proportion of patients who change x% or y points on a quality of life scale in the intervention group in comparison with the control group.[9] This could easily be included in the analysis of randomised controlled trials and would give a figure that physicians, at least, would probably find helpful. Such comparisons may or may not be of interest to patients. More work is needed on the perceptions and usefulness of the 'numbers needed to treat' concept for both patients and doctors.

As the number of intervention trials increase in general practice it will be important to draw together academic and nonacademic GPs and patients[12] into study teams. Only then will researchers efficiently use the small amount of resources available to general practice research in Australia to produce worthwhile outcomes that are relevant to the complexity of everyday practice.

continued page 662

Conflict of interest: this manuscript was accepted and edited by *AFP* staff members who have no university affiliations.

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