

# Hypertension and adherence to physical activity programs—a sticky matter!

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The public is informed on lifestyle from many sources. In contrast to drug therapy, consumers do not necessarily recognise their physician as being the most authoritative source of information on physical activity. While some physicians are naturally gifted in effecting behavioural change in patients, many of us are not and the track record of obtaining long-term adherence to healthy lifestyle measures is not good. The media provides advice on numerous effective and ineffective lifestyle measures, much of which derive from vested interests. In this context, it is not surprising that physicians have difficulty in getting patients to take up useful lifestyle measures in hypertension and that a bewildered community has decided that medical researchers cannot make their minds up on which lifestyle measures are worthwhile (table 1).

Nevertheless, the benefits of success in improving physical activity levels in hypertension are great. The possibility of shifting the frequency distribution of blood pressure in the whole population through physical activity and of achieving the challenging present-day targets for blood pressure by supplementing drug therapy is a major incentive.

## EFFICACY OF LIFESTYLE MEASURES

Research on efficacy of physical activity and other lifestyle measures has generally focussed on the effect of a single intervention, independent of others. However, single lifestyle interventions are almost unknown in real life. Increase in physical activity is always associated with altered diet.<sup>1</sup> A fundamental difference to drug prescription, therefore, is that the recommendation of an apparently simple lifestyle change is always a multiple intervention involving significant effects on daily life. Choosing suitable interventions is therefore the first step, and the challenge

**Table 1** The important ingredients to implementing any lifestyle measure in hypertension

1. Choose effective measures that are supported by convincing scientific evidence
2. Tailor these to the patient
3. Prioritise the chosen interventions
4. Set realistic targets and milestones
5. Communicate the rationale, methodology and expectations and negotiate goals
6. Prescribe specifically
7. Monitor against the agreed goals
8. Facilitate the first steps and provide encouragement and support thereafter

of inducing and maintaining change is such that efforts should not be wasted on useless and unproven measures. The scientific framework for contemporary recommendations on physical activity for hypertension has been reviewed in contemporary guidelines.<sup>2,3</sup>

## PHYSICIAN ATTITUDES TO PHYSICAL ACTIVITY AS THERAPY FOR HYPERTENSION

One important finding from surveys of primary practitioners is that, while, on the one hand, they will recite a list of lifestyle measures, these can differ widely from the list supported by international guidelines, including measures that are not supported by scientific evidence and excluding others that are.<sup>2,3</sup> This may in part reflect the lack of emphasis on lifestyle measures in postgraduate education, where pharmaceutical treatment occupies the greatest attention. It may also reflect individual patient successes and failures in the experience of the practitioner.

One surprising finding from focus groups of primary practitioners is that they discussed lifestyle measures at two levels. On one level, they always included lifestyle measure as the initial step in therapy of patients with hypertension in discussing case studies. At another level, however, there was a common lack of belief that lifestyle interventions are really effective.<sup>4,5</sup> If practitioners do not really accept that lifestyle measure are effective,

then it is unlikely they will be effective advocates for change in the eyes of the patient. Patient focus groups on the other hand frequently report their surprise that obvious adverse lifestyle factors were not even addressed during the consultation.

## LOSE WEIGHT, GET SOME MORE EXERCISE, STOP SMOKING

It is important not to give blanket recommendations to individual patients for a number of reasons. Suggestions tailored to the patient's present lifestyle are more likely to be appropriate and allow realistic goals and timelines to be set. In some individuals, a generally reasonable recommendation may be unsuitable, for example, exercise is impossible in some patients with coexisting conditions. Others may already be obtaining near-maximum benefit from their present exercise habits. Like drugs, there is a dose–effect relationship for the effect of physical activity on blood pressure.<sup>6</sup> These relationships tend to be sigmoidal with a plateau at higher “doses” of physical activity, where there are diminishing returns from additional efforts by the patient.

Blanket recommendations inhibit prioritisation of lifestyle changes by practitioners. This is to ensure that the most important goals are met. For example, whereas a range of lifestyle recommendations are appropriate for a hypertensive diabetic smoker, cessation of smoking is far and away the most important initial goal and should be pursued even at the cost of some worsening of other factors contributing to blood pressure, such as weight gain.

## IMPLEMENTING LIFESTYLE CHANGES—THE PROBLEM OF COMPLIANCE IN HYPERTENSION

A rule of thumb articulated by Podell and Gary<sup>7</sup> is that one third of patients always comply, one third sometimes comply and one third never comply. While these estimates are crude and largely unsubstantiated, compliance to therapy is a major problem in hypertension with drug therapy and is even more of a problem with lifestyle interventions. There is an arbitrary dichotomy into compliance and non-compliance, but the reality is more complex with partial compliance, “holidays” from physical activity and self-regulatory activities being common. There is a wealth of data suggesting that doctors cannot accurately predict which patients are compliant and which are not. A striking example from another field

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was a report by Gordon and Kass<sup>8</sup> that predictions of drug compliance by interns and residents in glaucoma patients were worse than by chance.

A standard definition of compliance offered by Haynes and Haynes<sup>9</sup> was "The extent to which a persons behaviour (in terms of taking medications, following diets or executing lifestyle changes) coincides with medical or health advice". This implies that the health advice a patient will receive is unitary and uniform. In fact, the decision to comply fully, partially or not is a judgement made by each patient each day and is based not only on the explicit advice of their doctor but also on the patient's implicit integration of advice and competing demands from numerous other sources.

### WHAT DOES THE LITERATURE ON COMPLIANCE TO THERAPY TELL US

What the literature makes clear is that there is no stereotype of a non-compliant patient and demographic variables do not consistently predict whether a patient will adopt a given piece of advice. Compliance is context-specific and, for example, higher in symptomatic illnesses such as angina than asymptomatic conditions such as hypertension.<sup>10</sup> Evidence of whether age is a predictive factor is unclear.<sup>11</sup> Gender is not but race and culture probably are in certain circumstances.<sup>12</sup>

### The psychology of compliance

The psychology of non-compliance surrounds the making of irrational choices, discounting future penalties, denial and entertaining unreasonable fears in the context of the values and wants of the patient. The psychological literature on non-compliance suggests that it is almost always intentional and the image of a passive, but forgetful or busy, patient is wrong. Elements of control are probably important. Self-regulation of health, rather than exactly following instructions, implies taking control.

### The clinical consultation

The nature of the clinical consultative process is crucial to whether advice is followed or not. It requires an effort by the practitioner to understand the perspective of the patient. Good communication as defined by the patient is essential. Patients complain variably of receiving too much information, too little information and of conflicting information. They talk of barriers to communication during clinical consultation arising

from their emotional state, particularly involving fear, desperation or denial. Positive aspects of the successful consultation have been reported to be the friendliness of the doctors and the degree to which concerns seem to be understood and expectations met.<sup>13 14</sup>

A particularly harmful effect of not meeting expectations is when practitioners ignore obvious adverse factors. Patients with hypertension who smoke or who are overweight and unfit expect to have this issue raised during the consultation and to be told to address these problems. A recurring theme of focus group interviews with our patients has been that if such issues were not raised during the consultation, this was taken as tacit approval or acceptance by the practitioner of the adverse lifestyle factor.<sup>4 5 15</sup> Practitioners, on the other hand, report that they were reluctant to raise an issue again that they have harped on previously, or where they feel they have little chance of eliciting behavioural change.

The provision of supporting information during the clinical consultation enhances compliance, and the longer the time spent by the doctor with the patient, the more likely it is that advice will be complied with.<sup>16</sup> The efforts made by the practitioner to bridge the social gulf between themselves and the patient and their ability to provide advice that is coherent with the patient's own beliefs have also been reported to support compliance. This requires flexibility on the part of the practitioner in providing information. A standard "pattern" will not meet the expectations of every patient. A non-judgemental, non-threatening patient interview is reported to be beneficial.<sup>17</sup>

A distinction can be made between patient's satisfaction with the consultation and their subsequent actions. It has been shown that patient understanding of the situation is proportional to their satisfaction with the consultation. Non-compliance, however, frequently occurs in the context of good understanding. The solution to patient non-compliance to lifestyle measures for hypertension is therefore more complex than the need for more information, clearer information or different formats.

Forewarning of the implications of compliance, and of non-compliance, is helpful. It is useful to supplement verbal explanations with written materials.<sup>18</sup> These must be readable and pitched at the level of the audience. Short words and short sentences are essential.

There is some evidence that promoting fear in the patient is counterproductive,<sup>19</sup> although this has been part of some successful programs. It is clear that many patients do not wish to be the decision-makers, and their desire for participation in decisions increases with the seriousness of the situation.<sup>20</sup> Educational measures have also been the subject of investigation. Reports are mixed on the usefulness of memory aids.<sup>21</sup> Telephone reminders are unpopular and generally unproven.

Multiple interventions may have the greatest value but are also resource-intensive. A typical program may include some, or all, of lectures, demonstrations, personal instructions, counselling, home visits, outreach clinics and special monitoring (table 2).<sup>22</sup>

Another common theme in the literature is that elements of the "Art of Medicine", although not quantifiable and somewhat mystical, are very important in inducing and maintaining lifestyle change. The American Heart Association Expert panel on Compliance<sup>23</sup> stated "The literature on compliance is dominated by reports of patients non-compliance with prevention and treatment recommendations, most commonly medication taking. There are fewer reports on how the behaviour of healthcare professionals and the delivery of medical care contributes to patients compliance with any health behaviour".

About half of patients either disagree with their doctor's conclusions or misunderstand them. The important components to avoid this are the provision of basic information on objectives and, if appropriate, possible adverse effects. Individually tailored education should cover beliefs, doubts, misunderstandings and economic and social barriers.

### The lifestyle prescription

Simplification of treatment involves prioritisation of lifestyle measures and breaking a long-term plan into small achievable steps. The lifestyle prescription, like the drug prescription, should be explicit, covering the nature of the

**Table 2** The short list of successful interventions<sup>22</sup>

1. Simple prescription
2. Clear instruction
3. Reminders
4. Rewards
5. Social support

treatment, that is, not just diet and exercise but what diet and what kind of exercise. It should include a dose—how often and how much each time. It should also include information on the duration of the intervention (generally lifelong) and how to respond to interruptions to the program. These need to be in the everyday language of the patient, not the scientific jargon of the health professional. It is best to discuss the potential for adverse effects.

### Follow-up and maintenance

Frequency of doctor visits relates to patient compliance in hypertension. These can be supplemented by reinforcement from nurses or pharmacists in a counselling role. Doctors complain of difficulty with competing demands reducing the time available for lifestyle advice. However, for the nurse, or other health professional, consultation is subject to all of the pitfalls referred to concerning the medical consultation. There is also a risk of conflicting advice and confusion with multiple providers. Frequent monitoring, encouragement and non-authoritarian approach to patients who fall short of their goals is helpful.

Any lifestyle change that is in the right direction can be contributing to a worthwhile effect overall. Some patients who appear to have failed in achieving major change in a lifestyle target may still be deriving benefit from multiple small changes in a range of unhealthy behaviours. This was observed in a trial of multiple lifestyle intervention in the community.<sup>14 15</sup> A significant difference in outcome was observed in the active over the control group, although changes in intake of individual nutrients, alcohol intake or exercise were small compared to the level of change seen in trials of single interventions.

### Reduction in drug therapy is a reward and an incentive that is highly valued by patients

The provision of rewards is an important component of behavioural change. Some lifestyle changes may offer rewards as perceived by patients, for example, more comfort during daily activities with weight loss and regular exercise. Others do not. Improved body image is a reward many will seek from an exercise program, and it is vital that reasonable expectations are set, as this will rarely occur with a moderate program of physical activity. It is important to emphasise the rewards of compliance and to forewarn and address negative effects.

One reward that cannot be underestimated is the potential to obviate the need for drug therapy in patients with mild hypertension or to reduce the amount of drug therapy in others. Patients perceived this as an important motivating factor. On the other hand, doctors may be more comfortable with drug therapy which they perceived as more predictable. We tested this successfully in a randomised-controlled trial in a low socioeconomic area.<sup>4 5 15</sup>

### Lifestyle interventions are not for everybody

There are some individuals who will never endure a particular lifestyle change. It is usual to attribute this to personality characteristics, although as mentioned above, there is no specific personality profile for the non-compliant patient. Genetics may also be important. This was powerfully illustrated by laboratory studies with experimental animals in our laboratory.<sup>24</sup> When a treadmill was provided in the cage normotensive Wistar-Kyoto rats voluntarily ran 6–7 km/day, mostly at night. Spontaneously, hypertensive rats apparently find the exercise less pleasing and ran, on average, less than 1 km/night.

### CONCLUSIONS

Increased physical activity in hypertension has efficacy and safety and is well tolerated.<sup>25</sup> The propensity to deal with multiple aspects of cardiovascular risk simultaneously makes physical activity programs very attractive in hypertension. They should be considered complementary to drugs rather than as alternatives and should never be pursued to the exclusion of drug therapy when standard threshold levels for drug treatment are encountered.<sup>2</sup> They have a powerful role in the prevention of hypertension and are among the only measures available to address the need to lower the population distribution of blood pressure.<sup>26 27</sup>

There are formidable barriers to implementation of lifestyle barriers and maintenance of healthy lifestyle long term. The literature on compliance suggests that these barriers may not be as great as we make them and an important component is to re-evaluate the medical consultation process. The interaction needs to be successful from the point of view of the patient and requires the provision of simple and intelligible prescription, clear instruction, follow-up monitoring including reminders and rewards and maximising social support. The practitioner need not act alone in this process but should

enlist wherever possible the full resources of the health system and local community support.

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