BLACKJACK LOGIC

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Why do we see these headlines in our medical journals?

"Beta-Blockers Could Benefit More Heart Patients"

"Variable Compliance Throughout The U.S. With Recommended MI Treatment Guidelines Reported"

"Older Patients Less Likely Than Younger Ones To Receive Cardiac Drugs When Indicated"

"Survival of Elderly After Acute MI Best At Teaching Hospitals"

"ACC Joins AMA in Call To Action On Beta Blockers"

These headlines all refer to physicians' under usage of Beta-blockers (BB's) post myocardial infarction (MI).

We Know the Benefits of Beta-Blockers

- Several large randomized clinical trials (RCT's) have demonstrated that the long term administration of BB's to patients after MI improves survival.[i] [ii] [iii]
- In the late 80's a meta-analysis of 23 randomized clinical trials showed a 22% reduction in mortality (using BB's vs. not).[iv]
- The American College of Cardiology (ACC) and the American Heart Association (AHA) guidelines strongly recommend using BB's to manage patients with acute MI.[v]
- The data from the Cooperative Cardiovascular Project (CCP) showed that mortality was decreased by 28 - 40% in post MI patients taking BB's at discharge compared to those not taking them.[vi]
- In the original RTC's, all patients were randomized so that the mortality benefit came from uncomplicated inferior wall MI's (2% mortality first year) and complicated anterior wall MI's with congestive heart failure (CHF) (40% mortality first year). Obviously most of the 22% decrease in mortality came from the complicated MI's.
- Now this is further supported by the new recommendations for CHF.[vii] An expert panel of CHF experts, after an 18-month review of the available data, concluded that most patients should receive the usual triple drug therapy [digitalis, diuretics and angiotensin - converting enzyme (ACE) inhibitors] *plus a fourth drug--a BB.*
- More recent data[viii] substantiates BB effectiveness in reducing cardiovascular morbidity and mortality among patients with MI. A recent Quality Care Alert from the ACC and AMA[ix] suggests that benefits outweigh the risks experienced by patients with asthma, chronic obstructive lung disease (COPD), diabetes, heart failure and peripheral vascular disease. *More patients should be considered for BB treatment.*

In Practice, Beta Blockers are Underused

- The ACC and AMA Quality Care Alert cautioned that too few eligible patients receive prescriptions for BB's.
- As late as the early nineties cardiologists were prescribing BB's for less than 50% of patients post MI.[x]
- In the recent review of data from the CCP mentioned above only 34% of patients received BB's, and this percentage was lower among the very elderly, blacks, and patients with the lowest ejection fraction, CHF, COPD, azotemia or type I diabetes mellitus. ***These higher risk patients seem to benefit the most from BB treatment post MI.***

- Currently, about 40% of CHF patients receive ACE inhibitors and just 5% receive BB's.
- A recent study[xi] showed that elderly patients with acute MI survive better at teaching hospitals. After review of all the possible variables, researchers felt that the decreased survival at non-teaching hospitals was associated with non-compliance with the MI treatment guidelines (lower usage of BB's and aspirin) .

Why is there a large gap between knowledge and practice?

No one seems to know. The authors of the most recent review of the topic speculate, "Physicians may be unaware of [these] guidelines or disagree with their content, or they may be resistant to guidelines because they perceive the loss of professional autonomy." [xii]

Let's consider "blackjack logic" here. Professional gamblers go to the casino to win. When they play blackjack, they <u>always</u> hit on 16 when the dealer has a 10 showing (unless they can count cards and know most of the tens are gone, a rare occurrence.) They play "straight book", according to the odds and probabilities in each situation *in order to win*.

We are professional healers, *paid to win.* The guidelines and the RCT's show us the *best way to win.* There is no room for intuition or relative contraindications when a significant decrease in mortality is at stake. We have to play "straight book" to give our patients the chance of the best outcomes. The results of our decisions are not as immediate, but the stakes are certainly higher. Remember, in blackjack, hitting on that 16 often results in losing, but after 100 tries you will win more often than if you didn't. ***In medicine*** (the analogy holds) ***we have to always play to win, using all the latest information to help us, especially since it's so hard to "beat the house."***

How should we proceed?

- Continue to read *Heartbeat*. We'll try to sort through the cardiology studies and give you the information from the RCT's that is "POEM" -- patient oriented evidence that matters. The data will help you win more often. We'll continue to urge you to use therapies with proven benefit that will result in better outcomes. [Attached is a "cribsheet" for using Beta-blockers post-MI.]
- Ask other sub-specialists to provide you with similar information.
- Go online. It's probably the best way to stay current I recommend *www.newsrounds.com.*
- Consider asking our health systems to provide mandatory guidelines to help us improve our compliance. (There is substantial geographic variation, and the gap between knowledge and practice is much less on the East coast, but we all have room for improvement.)

In medicine we have to strive to find and use new information to improve our probability of winning. This is where the blackjack analogy "folds". We can continually improve the odds as research gives us more information, but the cardiology "crib-sheet" will get longer and longer. Guidelines would be very useful in applying the appropriate information in each situation to improve patient outcomes.

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[i] *JAMA* 1981; 246: 2073-4
[ii] *N ENG J MED* 1981; 304: 801-7
[iii] *LANCET* 1981; 2: 823-7
[iv] *JAMA* 1988; 260: 2088-93
[v] *J AM COLL CARDIOLOGY* 1996; 28: 1328-428
[vi] *N ENG J MED* 1998; 339: 489-97
[vii] *AM J CARDIOL* 1999; 83(2a): 00-00
[viii] *JAMA* 1998; 279: 1351-7
[ix] *QUALITY CARE ALERT*
[x] *J AM COLL CARDIOL* 1995; 26: 1432-6
[xi] *N ENG J MED* 1999; 340:286-99, 309-310
[xii] *JAMA* 1999; 281: 627-633