

Translating intentions to prescriptions: Mind the gap!

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The World Health Organization has identified noncommunicable diseases (NCD) as the major threat to humanity and has come up with a global action plan for prevention and control of NCDs. The focus of this action plan is on four major NCDs, which include cardiovascular diseases (CVD), diabetes, cancer, and chronic respiratory diseases. India has the dubious distinction of being the diabetic capital of the world,^[1] but interestingly the incidence of hypertension is also significantly high with every fifth individual being hypertensive as reported from a cohort in South India by Mohan *et al.*^[2] Together diabetes and hypertension have more than an additive effect and significantly increase the cardiovascular morbidity. It is estimated that over 80% of deaths from CVD occurs in low- and middle-income countries and the Indian subcontinent is one of the regions with the highest burden of CVD in the world.^[3]

As intensivists, many of us may not be directly involved in primary prevention of CVD. However, we could contribute significantly by appropriate care of patients admitted with coronary events and ensuring initiation of secondary prevention strategies. Variations in practices among healthcare professionals are a critical issue to be addressed not just from an ethical and medicolegal standpoint but to improve quality and reduce costs.^[4]

In a complex environment such as the critical care unit where over 1000 tasks are performed in a 24 h period and several of them simultaneously by various members of the teams, errors and unintentional misses are not unheard of. While all of us abide by the ethical principle of “*Primum non nocere*” (first, do no harm), it is also important to ensure systems and processes that help us achieve our goals to translate current evidence-based knowledge to practice.

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Multidisciplinary clinical care pathways are useful tools that provide a care map by integrating management plans, displaying goals and outlining sequence and timing of actions necessary to achieve these with optimal efficiency.^[5] However, these are often criticized by clinicians as “cookbook medicine” while, in reality, pathways provide the option for deviation when the clinician deems appropriate. Ranasinghe *et al.* identified system-level barriers in China that preclude implementation of evidence-based care of acute coronary syndromes using clinical care pathways. They identified that the top five key barriers were leadership support for implementing quality improvement, variation in the capacity of clinical services and quality improvement resources, fears of patient disputes and litigation, healthcare funding constraints and high out-of-pocket expenses and patient related factors.^[6]

The first step to introducing goal-directed clinical care pathways is to identify the most common diagnoses for which patients are admitted and audit current practices. In this issue of Indian Journal of Critical Care Medicine, Christian *et al.* have evaluated the rationale in prescribing and adhering to guidelines in management of patients admitted their intensive cardiac care unit^[7] where the most common admission diagnosis was acute coronary syndrome.

The setting of the study is an exclusive cardiac care unit, and it is therefore, not surprising to note that antiplatelet drugs such as aspirin (86.5%) and clopidogrel (85.3%) were the most prescribed drugs. Current knowledge suggests that appropriate use of antiplatelets, beta blockers, angiotensin-converting enzyme (ACE) inhibitors and statins in patients with coronary artery disease would improve outcome. In this study, it is interesting to note that 75.8% of patients received statins, 50% of patients received ACE inhibitors and only 27.65% received beta blockers. It would be important to evaluate the reasons for nonprescription of these drugs in others and identify if in fact, they should have received them. Such focused analysis would help to implement change for quality improvement. Sharma *et al.* have shown suboptimal use of these evidence-based drugs in management of coronary artery disease in India.^[8] Ensuring systems and process to create reminders for use of these four medications in all survivors of acute coronary syndromes would be our contribution as intensivists for secondary prevention.

Interestingly, proton pump inhibitors (PPI) were the second most frequently prescribed drugs. The authors have appropriately introspected on the drug interactions and concerns on therapeutic ineffectiveness of clopidogrel when co-administered with PPI. A close look to see if it is being over used and stop it when not required would be of value as these are not medications without side-effects, particularly when unnecessarily continued long-term.

Tramadol was used in 44.71% of patients and more importantly in 75% of patients with acute coronary syndrome where it is not the recommended analgesic. The hesitancy to use time tested and cost-effective morphine in this set up to ensure appropriate pain management needs to be re-evaluated.

Cost of critical care is an important factor in treatment decisions in India.^[9] The authors have quoted a similar reason being a tertiary care teaching hospital which is likely to provide services to the low-and middle-income group. It appears that the pharmacy costs were a significant portion in the total cost. Hospitals in developed countries encourage prescription by generic name, strict implementation of evidence-based formulary and therapeutic interchange policy for cost-effective care. The authors state that only 19.5% of drugs were prescribed by generic name, and it may be food for thought to consider changing this practice and develop institutional policies to provide quality care at affordable cost in resource limited settings.

A striking observation in this study evaluating the

rationale of prescribing based on AHA/ACC guidelines is the use of streptokinase as the predominant thrombolytic therapy (96% of fibrinolytic treated ST-segment elevation myocardial infarction patients) therapy and minimal use of percutaneous coronary intervention (PCI). Increasingly, PCI is recommended when such facilities are available. If not, the recommendation is to use fibrin specific thrombolytics such as tenecteplase, reteplase or alteplase.^[10] The advantage of administering tenecteplase as a bolus has expanded the horizon to administer it in the prehospital setting for early reperfusion. Streptokinase, which is a nonfibrin specific thrombolytic is no longer marketed in the United States although, available in several other countries, including India.

Our intentions are clear, and we would like to appropriately use international guidelines and provide the best care to our patients in a cost-effective way. However, do our prescriptions reflect that? Introspective studies such as this will reveal our strengths and also bridge gaps by developing clinical pathways and institutional protocols.

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