UNDER-USE OF ASPIRIN IN ACUTE CORONARY SYNDROME

I read your editorial in the July-September 2006 issue of Pakistan Journal of Medical Sciences with interest.[1] I have the following comments to offer.

The findings of the Aspirin Awareness Usage Study (AAUS) that large number of patients suffering from acute coronary syndrome, a life-threatening emergency, did not receive the life saving drug Aspirin, from the family physicians. Also a considerable number of patients did not get Aspirin in the emergency departments of the hospitals on top of it neither in the hospital wards nor at discharge. Pharmacology, Medicine and Cardiology are taught for three years in the medical colleges and one year is spent for training in the house job. During these years if student do not learn the use of aspirin as life-saving drug in such a dreadful disease, a compulsive indication, then there is a serious flaw in the medical education. In fact these days practically, aspirin has only one use i.e. as an anti-platelet drug and if this single fact is not learnt and applied on the patients, it reflects seriously on teaching and learning processes as important practice points are missed while students are bombarded with too much useless knowledge.

Under use of aspirin in the wards and on discharge from the hospitals shows the lack of interest of teachers/consultants amounting to medical negligence.

Pakistan Aspirin Foundation is doing its job but this organization can only act at macro-level by organizing seminars and issuing guidelines etc. At the micro-level the job has to be accomplished by teaching institutions and through them by the family doctors by having received continued medical guidance. In fact such basic education on life-saving situations should also be imparted to nurses, pharmacists, paramedics and first aid workers. In turn through the doctors, nurses, pharmacists, paramedics, awareness spreads to the public. Furthermore, the word doctor means teacher and the main job of the doctor is to educate and motivate the patients about the treatments i.e. prevention health promotion as well as curative. It is the job of the doctor to fulfill information needs of the patients about aspirin. He /she should tell the patients as to why aspirin is prescribed along with its action etc, what results are expected and what would be the benefit of its use and harm of its non-use. It is important to explore with patients their beliefs about drugs as well as to help them identify barriers and misinformation.

If the patients are informed correctly and adequately, the adherence/ compliance to treatment is achieved satisfactorily otherwise uninformed patients stop taking the medicine. Unfortunately our students are not educated/ trained to inform the patients. There is a dire need for establishment of the departments of Clinical Therapeutics in the teaching hospitals and later in the District Hospitals to overcome the prevailing Therapeutic Deficit in the medical knowledge so that treatments of patients are placed on sound footing.

Teachers must also educate the students about the arts of good communication by practical demonstrations. At each visit doctors should cross check the medicines that the patients are taking. I do not think that low price is a factor in under-prescribing of aspirin; on the other hand it has a positive value.

In acute coronary syndrome, in addition to aspirin, beta-blocker (if there are no contraindications) should be prescribed by the family doctors, as use of beta-blocker as an emergency drug is also known to reduce mortality and morbidity (infarct size etc). These two drugs should be continued for indefinite period in ischaemic heart disease. Statins are also underused in ischaemic heart disease. In many patients ACE inhibitors also have useful role.
It is a well known saying of the philosopher/ Artist Voltaire (15th century) "Doctors pour

drugs about whom they know little, for diseases about which they know even less, into patients about whom they know nothing."

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RESEARCH PROGRAMS FOR NURSING STUDENTS: Does it improve their Knowledge?

Participation by nursing students in research is widely regarded as a valuable component of Nursing education and a stimulus to a Nursing research career.[1] At the Shiraz University of Medical Sciences (SUMS) student research programs were introduced in Nursing School curricula more than a decade ago although not systematically. There has been major concern about impact of engagement in such programs on knowledge of students. We tried to examine, whether nursing student research programs during undergraduate courses is an effective protocol to improve their knowledge.

For this eight research projects on epidemiology were assigned to 70 nursing students with the objectives of introducing them to epidemiology and research methodology. Duration of these projects was two months. Students were examined about general information of epidemiology and research methodology with a questionnaire which contained thirty questions ten days before starting the projects.

Weekly interaction with the staff of department of epidemiology was ensured. On completion of these projects, the representatives of the eight groups presented their findings to the staff and also submitted a written report. Ten days later, second examination was taken with the same questionnaire. Comparison of Grades of both exams was analyzed by paired t-test and for more confidence; Wilcoxon signed Ranks T-test. Feedback was also collected from the participants. The students enjoyed the exposure to research methodology and the opportunity for team work and leadership.

In the second examination, an increase of 22% (S.D=21%) was seen in the mean grade of the students. This difference in the grades was regardless of the educational level of the students. As such we feel that involvement of nursing students into research projects and inclusion of research subjects into the curriculum of preclinical and clinical study can be considered.

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SURROGATE MARKERS: Atherosclerotic Vascular Disease and Periodontal Infection

The atherosclerosis and periodontitis have complex aetiologies, genetic and gender predispositions and may share pathogenic mechanism as well as common risk factors. High serum/low density lipoprotein cholesterol, elevated tissue plasminogen activator, elevation of serum C-reactive protein, elevation fibrinogen level, increased white cells, increased neutrophils and lymphocytes, platelets and decreased red blood cells and hemoglobin are markers of CAD.[1-4] Twenty patients (M:F, 7:5) in age group of 30-40 years having atleast a minimum of seven sites exhibiting periodontitis, 9 mm (9.0$\pm$1.2 mm) of clinical loss of attachment, 20 number of teeth (20 $\pm$ 1.2) in the dentition were selected for study. The ten control (healthy) non-periodontal (without clinical loss of attachment, 28 number of teeth) cases comprised 10 subjects (M:F, 5:5 ranges 31-40 years) were selected. In none of (patients and control) participants was cardiovascular disease or any other ongoing general disease or infections diagnosed. In all these cases, the peripheral blood were drawn before treatment

for investigation i.e. CRP, LDL-C, t-PA and routine blood investigation. Plasma was obtained after centrifugation at 1500g for 10min and stored at –4^{0}C until analysis. CRP was analyzed by an immunoassay (using mentura, CA, USA two mono clonal antibodies with sensitivity 0.3 mg/l as Medix Diacox). t-PA concentration were determined by ELISA (Immulgse t-PA, Biopool International). LDL-C was estimated enzymatically.

All these biomarkers were significantly increased while red blood cell and hemoglobin level were decreased in periodontitis as compared to control. The systemic markers of inflammation in this study have been also regarded as predictive markers for cardiovascular disease. Therefore, changes in these markers in periodontitis may be part of the explanation why periodontitis is associated with cardiovascular diseases.

Table-I: Various cardiovascular biomarker in periodontitis and control subjects

Biomarkers	*Periodontitis patients*	*Control*
White cell count ($x10^9$/L)	7.8 ±1.2 (6.8–10.3)	6.2±1.3 (5.1–6.4)
Neutrophils ($x10^9$/L)	4.9 ± 1.2 (3.7 – 5.3)	4.2 ± 1.4 (2.7–5.2)
Lymphocytes ($x10^9$/L)	2.3±0.7 (1.8–3.2)	1.8±0.7 (1.5–2.1)
Red blood cells ($x10^{12}$/L)	5.0±1.6 (4.6–5.4)	5.2±1.7 (4.8–5.6)
Hemoglobin (g/L)	148±36 (135–151)	147±32 (132–149)
Platelets ($x10^9$/L)	248±42 (203–264)	228±43 (182–250)
CRP (mg/L)	2.8±0.7 (1.2–6.8)	1.5±0.8 (0.5–4.2)
T-PA (ng/L)	9.2 ± 0.5 (6.6–19.8)	8.2±0.6 (5.2–9.3)
LDL-C (mg/dl)	187±43 (158–281)	162±45 (143–212)

$p<0.01$

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SAFETY AND EFFICACY OF REPAGLANIDE AND GLIBENCLAMIDE

This is with reference to the article "safety and efficacy of Repaglanide compared to Glibenclamide in the management of type 2 diabetes" published in the Oct-Dec 2006 issue of Pakistan Journal of Medical Sciences.[1]

The authors have compared Glibenclamide with Repaglanide in the treatment of diabetes-mellitus without comparing their cost-effectiveness which is an important factor for treatment of a life-long disease. Pharmaco-economics is given utmost important even in the highly developed countries and has more significance in the underdeveloped poor countries, where large majority of the patients cannot afford even cheap medicines. It is to be noted that cost of one day treatment with full dose Repaglanide (Novonorm) is Rs.120.00, while one month treatment cost is Rs.3600 and a year's treatment cost would amount to Rs.43200 and life long treatment of approximately thirty years, would be Rs.1296000.00. On the contrary the cost of one day treatment with Glibenclamide is Rs.2.5, a month cost Rs.75.00, a year cost Rs.900.00 and life-long Rs.24000.00. Thus there is an astronomical difference in the cost of treatment with these two drugs and that too without any significant difference in their effectiveness, efficacy and side-effects etc.

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