LETTERS

Hospital pharmacy services in Pakistan

Pakistan launched the National Drug Policy (NDP) as an essential element of the National Health Policy (NHP) to achieve 'health for all' in 2000. According to the NDP, hospital pharmacy services need strengthening and should be established at the federal or provincial level. The NDP also stated that all teaching, divisional and district hospitals should have Pharmacy and Therapeutic Committees (P&TC).¹ Historically, P&TC have had an effective role in improving safe and cost-effective usage of medicines. They also improve and implement the strategies for quality use of medicines. In Pakistan, small or medium size hospitals at divisional or district level lack P&TC; only few have P&TC. Most P&TC are authorised for procurement of medicines.² There are very few pharmacists in P&TC and pharmacists are not performing their exact role in formulary development.³

The NDP states that one hospital pharmacist should be appointed for each 50 beds in a hospital facility.¹ However, there is an acute shortage of pharmacists and only one pharmacist is available per 1200 beds in public hospitals.⁴ In 2009, the Supreme Court of Pakistan directed the health department of each province to ensure that the number of pharmacists in public hospitals met the specified criteria.⁵ Almost 2700 pharmacists graduate annually in Pakistan. Despite the small number of pharmacists, more than 15 000 pharmacists do not have appropriate jobs and only 15% are engaged in hospitals, administrative and technical jobs in the public sector.^{3, 4} Hundreds of pharmacist jobs in hospitals are still vacant.^{4, 5} The major reason behind the shortage of pharmacists in public hospitals is the lack of funds and financial resources.⁵ Pharmacy services and the number of pharmacists in private hospitals are also inadequate.

Furthermore, pharmacists in hospitals are not appropriately engaged in clinical services and pharmaceutical care due to the monopoly of the physicians. Doctors are not accepting the role of pharmacists in clinical decision-making. Pharmacists in hospitals are performing only traditional responsibilities and the majority (84.5%) of hospital pharmacists are only involved in record keeping. Successful implementation of pharmaceutical care

in hospital pharmacy services needs an optimal discourse and interaction between doctors and pharmacists, which does not happen in the majority of public hospitals. Doctors get in touch with pharmacists just to inquire about the availability of medicines.³

The NDP emphasised the importance of establishing model hospital pharmacies in teaching hospitals. It also reiterated that modern drug distribution and supply systems should be strengthened so that smaller hospitals could have a better system of ordering, procurement, packaging, storage, distribution and inventory.¹ However, this is not currently the case as with the shortage of pharmacists in hospitals. After 16 years of NDP endorsement, modern hospital pharmacy services still seem a dream.

Finally, federal and provincial governments should provide funds to facilitate good pharmacy services and the required number of pharmacists in hospitals. There should also be an effective collaboration between doctors and pharmacists to improve clinical outcome.

EAHP Statement 4: Clinical Pharmacy Services

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REFERENCES

- 1 World Health Organization (WHO). National drug policy – Pakistan. <http://apps.who.int/medicinedocs/en/d/Js17118e/> (cited 2017 Mar 12).
- 2 Gul W. PTC is important for the betterment of the hospital pharmacy. *Inn Pharma & Pharmacotherapy* 2014;**2**:307–11.
- 3 Azhar S, Hassali MA, Ibrahim MMI. Perceptions of hospital pharmacist's Role in Pakistan's Healthcare System: A Cross-Sectional Survey. *Tropical Journal of Pharmaceutical Research* 2011;**10**:11–17.
- 4 Dawn. One pharmacist needed for 50 hospital beds: experts. 2016 <http://www.dawn.com/news/1289197> (cited 2017 Mar 12).
- 5 Zia A, Malik E. Defying laws of supply, demand: hospitals fall far behind WHO standard for pharmacists. *The Express Tribune* 2013 <http://tribune.com.pk/story/634103/defying-laws-of-supply-demand-hospitals-fall-far-behind-who-standard-for-pharmacists/> (cited 2017 Mar 12).

Is diuretic use beneficial or harmful for patients with chronic kidney disease?

Chronic kidney disease (CKD) is a global health concern that arises as a result of a number of different insults to renal function.¹ Progression of CKD to end-stage renal disease is a costly and important clinical event with substantial morbidity.² Additionally, increase in demand for renal replacement therapy (RRT) makes it important to investigate factors associated with the progression of CKD and the prognosis of earlier stages of CKD.

A retrospective study was conducted of subjects with an estimated glomerular filtration rate (eGFR) between 15 and 59 mL/min/1.73 m² during a 2-year study period from a hospital database. A total of 621 patients of mean age 61.09±6.57 years were identified. At baseline, 438 patients (70%) were at CKD stage 3 and 183 (30%) were at CKD stage 4. At the end of follow-up, CKD progression was observed in 372 patients (59.9%) while 113 (18%) died. To determine the factors independently associated with CKD progression, a series of logistic regression analyses was performed. Higher systolic blood pressure (HR 1.06, p=0.04), diabetes mellitus (HR 2.01, p=0.02), use of diuretics (HR 2.01, p=0.01), high serum phosphate (HR 1.24, p=0.01), heavy proteinuria (HR 3.09, p=0.03) and microscopic haematuria (HR 2.07, p=0.02) were associated with CKD progression. Surprisingly, the use of diuretics was observed as an independent determinant of CKD progression.³

In order to confirm our findings, we further conducted a prospective observational study by recruiting patients with

CKD visiting the outpatient nephrology clinic at Hospital Universiti Sains Malaysia. A total of 312 patients (mean age 64.5 ± 6.43 years, 57% male) with mean eGFR 24.5 ± 11.2 mL/min/ 1.73 m² were recruited; 144 patients (46%) were prescribed diuretics and were followed up for 1 year. At the end of follow-up, patient outcomes were assessed in terms of decline in eGFR, initiation of RRT and death. The use of diuretics was significantly associated with a decline in eGFR, with diuretic users having an annual decline in eGFR of -3.5 ± 1.6 mL/min/ 1.73 m² compared with -1.6 ± 0.77 mL/min/ 1.73 m² among diuretic non-users. A total of 36 patients (11.5%) initiated RRT, and the need for RRT was greater among diuretic users (30 diuretic users vs 6 non-users). Overall, two deaths (0.64%) occurred in the current study, both of whom were on diuretic therapy. Poor renal outcomes among diuretic users might be attributed to various other confounding factors such as hypervolaemia, higher systolic blood pressure and proteinuria.^{4,5} However, the attribution of all confounders was adjusted in all statistical analyses and, despite adjustment, diuretics were found to be independently associated with poor renal outcomes in non-dialysis-dependent patients with CKD.

The purpose of this study is not to challenge the potential benefits of diuretics in patients with CKD. However, we made an attempt to highlight the potential risks of diuretics to draw the attention of health-care professionals towards the dark side of diuretic therapy that can be potentially fatal for patients in the long term.

EAHP Statement 4: Clinical Pharmacy Services

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REFERENCES

- 1 El Nahas AM, Bello AK. Chronic kidney disease: the global challenge. *The Lancet* 2005;365:331–40.
- 2 Ojo A. Addressing the global burden of chronic kidney disease through clinical and translational research. *Trans Am Clin Climatol Assoc* 2014;125:229.
- 3 Khan YH, Sarriif A, Adnan AS, et al. Progression and outcomes of non-dialysis dependent chronic kidney disease patients: a single center longitudinal follow-up study. *Nephrology* 2017;22:25–34.
- 4 Hur E, Usta M, Toz H, et al. Effect of fluid management guided by bioimpedance spectroscopy on cardiovascular parameters in hemodialysis patients: a randomized controlled trial. *Am J Kidney Dis* 2013;61:957–65.
- 5 Alvarez-Lara MA, Martín-Malo A, Espinosa M, et al. Blood pressure and body water distribution in chronic renal failure patients. *Nephrol Dial Transplant* 2001;16(Suppl 1):94–7.