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Efficiency of computerized warning system reduces polypharmacy in the elderly

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Objective: Polypharmacy in the elderly complicates therapy, increases cost and is a challenge for healthcare agencies. Computerized warning system to reduce polypharmacy is a drug optimization process.

Methods: We used a prospective before-and-after design among patients aged 80 years or older admitted to Taipei City Hospital from November 1, 2012, through January 31, 2013 before the addition of the warning system and from April 1, 2014 through June 30, 2014 after the warning system was added. We enrolled 189 elderly adults (aged ≥80 years) who had been prescribed 10 or more chronic medications (drugs prescribed for ≥28 days), visited three or more different physician visits during 3 month screening period before warning system setting. Data were analyzed using Pair t test and significance (α) was set at $P<0.05$ by the JMP5.12.

Results: We enrolled 189 patients in our study, excluded 30 patients without physician visits after warning system setting, where the ratio of males: females were 89:70. The mean (SD) age of our patients was 85.8 (10.2) years. After the warning system was deployed, there was an immediate and sustained decrease in the rate of orders for the medications. The mean rate of prescribing medications dropped from 14.1 to 11.4 orders per day (SD 2.7; $P<0.001$) and physician visits number decreased from 3.5 to 3.1 per month (SD 0.5; $P<0.001$). There was no evidence that this effect waned over time.

Conclusions: Computerized warning system embedded into the healthcare information system (HIS), used in patients, can decrease the medication number quickly and specifically. The financial cost of polypharmacy involves both the direct expenditures for prescription medications as well as significant indirect costs related to hospitalization and treatment of severe adverse drug reactions. Computerized warning system may have a positive impact on prescribers and patients. The mainstay for preventing and managing polypharmacy remains heightened awareness of patients at risk. Pharmacovigilance is required by the patient, physician and pharmacist in thoroughly reviewing and reconciling the patient's medication regimen at every opportunity.

Biography

Wan-O Chu has graduated from the Department of Pharmacy Taipei Medical University (TMU) and Institute of Biomedical Engineering National Yang Ming University. He is an Adjunct Instructor at TMU and a Pharmacist in Taipei City Hospital, Department of Pharmacy. He has published more than 10 papers in a local journal and 2 posters in International Pharmaceutical Federation (FIP).

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