Abstract of Master's Dissertation

No.1

Course	International Health Development (MPH)	Name	Ai Yonekawa
Thesis Title	Anti-diabetic and Anti-helminthic drug use in three hospitals in Lao PDR		

Background and Objective: Drug utilization research contributes to rational drug use. The Anatomical Therapeutic Chemical (ATC) classification system and the Defined Daily Dose (DDD) as a measuring unit was developed with an increased concern about drug utilization studies. This study compares the anti-diabetic and anti-helminthic medicine use among three hospitals in Lao PDR by applying the ATC/DDD system. The three hospitals are 1) Mahosot hospital (MH), one of the central hospitals in the Vientiane capital city, 2) Sisattanak district hospital (SDH), a district hospital in the Vientiane capital city, and 3) Xebangfai district hospital (XDH), a rural district hospital in Khammouane Province.

Method: A research team of National Center for Global Health and Medicine (NCGM), Japan with Lao Tropical Public Health Institute (LaoTPHI) collected data of the medicine use in 2017. MH provided only the 2016 annual purchase plan. Additional information was gathered by hospital visits in 2019 and through emails. All the anti-diabetic and anti-helminthic medicines used or on the purchase plan were converted into ATC/DDD by the author.

Results: 1) The amount of anti-diabetic medicines (DDDs/year) were 266,000 in MH, 7065 in SDH, and 310 in XDH. 2) The annual number of Diabetes Mellitus (DM) patients was 8,369 in 2018 in MH, and 365 in SDH in 2016 (no data for XDH). MH used 86.8 DDDs/1000 DM patients/day, and SDH used 52.9 DDDs /1000 DM patients/day. 3) Insulin (A10A) was used only in MH. Insulin occupied 76.1% of the total DDD followed by metformin (biguanides, A10BA, 16.9%), glibenclamide and gliclazide (sulfonylureas, A10BB, 4.7%) and pioglitazone (thiazolidinediones, A10BG, 2.3%). In SDH, glibenclamide (52.9%) and metformin (47.1%) were used almost equally. In XDH, only glibenclamide was used. 4) The amount of anti-helminthic medicines (DDDs/year) was 22,500 in MH (albendazole; 20,000, mebendazole; 2,100, and praziquantel; 400), 264.2 in SDH (albendazole; 251, praziquantel; 13.2), and 391 (albendazole; 41, mebendazole; 350) in XDH.

＊ The abstract, containing the objective, method, result and conclusion should not exceed 300-500 words.

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Conclusion: The amount of the anti-diabetic and anti-helminthic medicine use in the three hospitals were small. 1) DM patients may not take medicine regularly or stop taking medicine, 2) DM patients buy medicine from pharmacies (or from Thailand for example), or 3) The hospitals prescribed donated medicines which were not counted as used medicine. For anti-helminthic medicine, many vertical helminth control programs/projects provided free anti-helminthic medicine which might be used for treatment. As this kind of medicine use/distribution overwhelmed the prescription of medicine in the hospitals, the rational drug use cannot be evaluated just by applying the ATC/DDD system to the hospitals. Yet, measuring the medicine use in the medical facilities by applying the ATC/DDD system is the first step to clarify the medicine use in Lao PDR. For the future improvement of transparency and traceability of medicine use, a simple standardized medicine recording system using the ATC/DDD system should be introduced nationwide.

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