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LETTER TO THE EDITOR

Appropriate nomenclature: angiotensin II receptors

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Dear Editor

Radford[1] published an interesting clinical case report of rural patients taking angiotensin II type 1 (AT_1) receptor antagonist – commonly also referred to as angiotensin receptor antagonists, AT_1 receptor blockers, angiotensin receptor blockers or ARBs – who experienced a sudden loss of consciousness whilst exercising gently in the heat. The findings in this manuscript support, in a clinical setting, previous experimental observations seen in rats[2]. The article also highlights the potential need for a larger scale controlled study, which includes a rural cohort, to confirm these observations, considering the widespread use of AT_1 receptor antagonists.

However, Radford's[1] article title, 'Sudden collapses in the heat in patients on angiotensin type 2 receptor blockers' and the referral to angiotensin type 2 receptor blocker (AT_2RB) throughout the manuscript is incorrect nomenclature. We were surprised to see that angiotensin II type 2 (AT_2) receptor antagonists were being used by patients; however, when viewing the medication list in Table 1 of their article, it became clear that it was, in fact, AT_1 receptor antagonists (namely, irbesartan and candesartan) that were being used by these patients. This is certainly not the first time that inappropriate nomenclature has been used for angiotensin II receptors in the literature.

According to the International Union of Basic and Clinical Pharmacology, and British Pharmacological Society[3] and the highly regarded and cited manuscript by de Gasparo et al[4], there are two main angiotensin II receptors – the type 1 (AT_1) and type 2 (AT_2) receptors. The actions of the AT_1 receptor are well characterised and include vasoconstriction, aldosterone and vasopressin release, renal sodium reabsorption, increased collagen deposition, cellular proliferation, and cardiomyocyte hypertrophy, as reviewed by de Gasparo et al[4] and D'Amore et al[5]; hence, the beneficial effects of AT_1 receptor antagonists in conditions such as hypertension. However, the role of the AT_2 receptor remains somewhat enigmatic but is thought to be upregulated in pathological remodelling, oppose the actions of the AT_1 receptor, potentially act constitutively and potentially play a cardio-protective role[4-7]. With this in mind, it has been suggested that there is a potential pharmacological role of AT_2 receptor ligands[7].

With a large amount of research (both basic and clinical) in the area of angiotensin II receptors and the potential future pharmacological use of AT_2 receptor ligands, there is a real danger of causing confusion by the use of incorrect angiotensin II receptor nomenclature. We suggest that future manuscripts (such as angiotensin II receptor-related manuscripts) are published using the correct receptor nomenclature and drug classifications as outlined by the International Union of Basic and Clinical Pharmacology, and British Pharmacological Society[8].

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