metal's angina are both given as contraindications in the datasheet for sumatriptan; the datasheet also includes advice against the concomitant use of ergotamine. Willett and colleagues' report therefore clearly highlights the need for these warnings and emphasises that sumatriptan should be avoided if there is a history of ischaemic heart disease or undiagnosed chest pain.

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1 Willett F, Curzen N, Adams J, Armitage M. Coronary vasospasm induced by subcutaneous sumatriptan. *BMJ* 1992;**304**:1415. (30 May.)

AUTHORS' REPLY,—Though we agree that the case that we reported highlights the need for warnings against using sumatriptan in ischaemic heart disease and known cases of coronary vasospasm, we believe that we clearly implied that the injection of sumatriptan given in this case did cause coronary vasospasm, which is commonly thought to be the underlying mechanism of so called Prinzmetal's angina. We therefore believe that we expressed this diagnosis clearly.

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EDITOR,—In their report of a case of coronary vasospasm after subcutaneous administration of sumatriptan F Willett and colleagues state that the Committee on Safety of Medicines has received only one similar report.[1] The Netherlands Centre for Monitoring of Adverse Reactions to Drugs has received reports of 12 similar cases, mostly after oral intake (table).

All patients experienced chest symptoms, almost invariably within one hour after administration of sumatriptan. Symptoms varied from substernal tightness to severe cramping angina-like pain radiating to the left arm and hand. In one patient a transient increase in blood pressure to 200/120 mm Hg was noted, which later fell to 160/90 mm Hg. Four reporting medical practitioners classified the symptoms as anginal, and two of them notified these as "classical" or "real" angina pectoris. In all patients symptoms resolved without further treatment.

Electrocardiograms were normal in cases 3, 5, and 8 but were obtained after the chest symptoms had resolved. An echocardiogram and results of an exercise test performed after the first episode of chest pain in case 8 were normal. Except for one patient, who was said to have had a similar reaction to ergotamine in the past, none of the patients had had similar episodes before using sumatriptan and none developed such symptoms after stopping it.

Early studies suggested that serotonin-1 ($5\text{-}HT_1$) receptors are largely confined to the cranial circulation. Serotonin induces contraction of isolated epicardial coronary arteries,[2] which seems to be unopposed.[3] As serotonin-2 receptors are more common than serotonin-1 receptors in coronary arteries the effect of sumatriptan on coronary vasculature seems to be relatively mild.[4] Even so, sumatriptan elicited a vasoconstrictive response 30% of that to serotonin.[3]

Although this may not be clinically relevant in most patients, Chester *et al* suggested that when atherosclerotic changes decrease the luminal cross sectional area of the artery, problems may arise as the response to serotonin-1 is maintained in the area distal to an atherosclerotic occlusion.[3] This may be important, as the enhanced vasoconstrictive response of atherosclerotic isolated epicardial coronary arteries to histamine[2] is also seen to serotonin.[5] A study by the manufacturer of sumatriptan in 10 patients with existing or suspected coronary artery disease showed an average constriction of coronary arteries of 13·9% 10 minutes after subcutaneous administration of 6 mg.[5] Although aortic and pulmonary artery pressures were raised, cardiac output did not change. Although no electrocardiographic abnormalities were noted, only one patient experienced chest tightness (Glaxo, unpublished data).

The case reported by Willett and colleagues shows that ST elevation may occur after subcutaneous sumatriptan,[1] and this Dutch series shows that oral intake may also be followed by anginal pain.

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Harm minimisation for drug misusers

EDITOR,—John Strang and Michael Farrell suggest that maintenance programmes with oral methadone may reduce the harm that drug misusers do to themselves.[1] Colin Brewer and colleagues chastise the authors for being too timid and criticise the many British clinicians who are reluctant to prescribe long term maintenance treatment with generous dosages of methadone.[2] Unfortunately, in their contributions none of these workers consider the harm that long term maintenance policies can do to those other than the drug misusers accepted for treatment.

I work as a general practitioner in a part of the country where drug misusers are commonly treated with long term maintenance programmes. Methadone is most commonly prescribed, but dihydrocodeine, diazepam, and temazepam are also often used. A greater emphasis is placed on achieving a stable lifestyle than on working towards a life without drugs of misuse.

One result of this policy has been a flood of drugs on to the black market as misusers sell them, either to gain money to buy the drugs they really want or to convert them into a regular weekly income. Drugs, originally prescribed legally, are now readily available in shopping centres, school playgrounds, and pubs; adults actively look for new children to supply so that the market is continually expanding. The money to pay for these drugs is nearly always raised by crime.

Whether or not long term maintenance policies can be justified, those who operate them have a strong obligation to see that as few drugs as possible leak into the rest of the community. Work showing that maintenance policies benefit the recipients is of little value if many more people are drawn into drug misuse as a result.

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Farmer's hip

EDITOR,—I was interested in Peter Croft and colleagues' finding that farmers are at increased risk of osteoarthritis of the hip[1] because, like others,[2-5] I have observed an increased incidence of hip replacement among my patients who are or have been farmworkers (table).

The controls were men of the same age (to the nearest five years) as the farmers who were on my practice list. Their occupation varied but was not necessarily sedentary: they were local government employees, teachers, shop assistants, police, gamekeepers, and builders. Those aged over 65 were retired businessmen and had previously lived outside Ryedale. Most had not engaged in manual jobs requiring the lifting of heavy loads.

The prevalence of hip replacement among men who had farmed for more than 10 years was 14 times and eight times greater than that in controls for those aged over 50 and over 60 respectively. These figures are similar to those found in moorland Staffordshire and lowland Cheshire.[1]

Croft and colleagues say that a question as yet unanswered is whether risks relate particularly to

Details of 12 cases of chest symptoms after administration of sumatriptan reported to Netherlands Centre for Monitoring of Adverse Reactions to Drugs

Case No	Age and sex	Dose and route	Latent period (min)*	Symptoms notified by reporting doctor	Recurrence of symptoms after rechallenge†	Other drugs
1	36, F	100 mg orally	30-45	Substernal pressure and discomfort, drowsiness, "shaky"	ND	Terfenadine 60 mg
2	38, F	100 mg orally	30	Substernal pressure and pressure in shoulders and neck	>10 times	Carbamazepine 600 mg, lactulose, hydroquinone hydrobromide dihydrate 100 mg
3	61, F	100 mg orally	About 30	Anginal pain radiating to left arm	2 times	Isosorbide dinitrate 5 mg
4	46, F	100 mg orally	15	Substernal pressure and chest pain, sweating	3 times	Oral contraceptive
5	53, M	100 mg orally	About 30	Anginal pain	ND	None
6	44, M	100 mg orally	30	Substernal chest pain, palpitations, pain in throat	ND	None
7	27, F	100 mg orally	30	Substernal chest pain, malaise, paraesthesia, heaviness of arms	ND	None
8	33, F	6 mg subcutaneously	1-5	Angina pectoris radiating to left arm and hand, dyspnoea	2 times	Propranalol 60 mg
9	45, F	100 mg orally	Same day	Substernal pressure, muscle stiffness	ND	None
10	19, F	6 mg subcutaneously	30-60	Chest pain, dyspnoea, nausea	ND	Oral contraceptive
11	50, F	6 mg subcutaneously	1-5	Anginal pain radiating to the jaw, hypertension	ND	Clonidine 100 μg, aspirin 600 mg
12	36, F	100 mg orally	30	Substernal chest tightness	ND	None

*Between first intake and onset of symptoms as notified by reporting doctor. †ND=Rechallenge not done.