us first objectively show that there is indeed a growing problem at all, and if there is one then consider the best way to tackle it in the interest of the profession and the public we serve.

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Dopamine and dobutamine

SIR,—I am worried at the relative lack of differentiation given to the recently introduced pharmacological agents dopamine (Inotropin) and dobutamine (Dobutrex) discussed in your recent leading articles (17 December, p 1563, and 22 April, p 1010). It is unfortunate that these agents have similar generic names as, although both have inotropic action, there are important differences between them:

(1) Dopamine is a naturally occurring hormone which is the precursor of noradrenaline,¹ whereas dobutamine is a synthetic catecholamine which acts directly on the receptor sites of myocardial muscle.²

(2) Dopamine is dependent for its effect on the release of myocardial noradrenaline,¹ while dobutamine is not.³

(3) Dopamine has been associated with peripheral vasoconstriction⁴ and there have been reports of digital gangrene with dopamine usage,⁵ neither of which has been described in relation to dobutamine.⁶

(4) Dopamine exerts a direct effect on the dopaminergic receptors within the renal vasculature, which can result in an increased urinary flow.⁷ This improvement in urinary output may or may not be related to improvement in cardiac output. Dobutamine exerts no specific effect on these dopaminergic receptors and any increase in urinary flow is related to an increase in cardiac output.⁸

It is also of interest that there are strong reasons to support the experimental evidence⁹ that the inotropic action of dobutamine does not produce expansion of myocardial ischaemia following infarction.¹⁰

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¹ Goldberg, L I, *New England Journal of Medicine*, 1974, **291**, 707.

² Stoner, J, Bolen, J, and Harrison, D C, *British Heart Journal*, 1977, **39**, 536.

³ Loeb, H, and Bredakis, J, *Circulation*, 1977, **55**, 375.

⁴ Greene, S I, and Smith, J, *New England Journal of Medicine*, 1976, **294**, 114.

⁵ Alexander, C, and Sako, Y, *New England Journal of Medicine*, 1975, **293**, 591.

⁶ Robbie, N, and Nutter, D, *Circulation Research*, 1974, **34**, 663.

⁷ Goldberg, L I, *New England Journal of Medicine*, 1974, **291**, 707.

⁸ Leier, C B, Webel, J, and Bush, C, *Circulation* **56** (3), 468.

⁹ Tuttle, R, and Pollock, G, *Circulation Research*, 1977, **41**, 357.

¹⁰ Gillespie, T, and Dieter Ambros, H, *American Journal of Cardiology*, 1977, **39**, 588.

Stiff shoulder after stroke

SIR,—Professor J C Brocklehurst and his colleagues (20 May, p 1307) found that 21 patients out of 135 with acute strokes had developed a stiff and painful shoulder within two weeks.

In our experience in this unit this early complication of a stiff and painful shoulder is entirely preventable and we have not seen it in patients admitted directly to our unit for very many years. It is not a matter of treatment

by the physiotherapists but of treatment by the nurses. All nurses in our unit are taught that whenever they attend a patient with an acute stroke, whether he is in bed or in a chair, they must lift his hemiplegic arm well above his head once in addition to whatever else they are going to do for him. This is a simple task and we often ask relatives as well as the nurses to do it for the patient. There is no reason why it should not be done by the patient's family if he is nursed at home.

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Non-epileptic television syncope

SIR,—Your leading article on television-induced epilepsy and its prevention (20 May, p 1301) was most helpful, but your readers may gain the impression that all seizures which occur in front of the television set are epileptic. Once again¹ it is important to emphasise that there is another common type of seizure, the "anoxic" seizure,² otherwise known as convulsive syncope. Anoxic seizures of this kind occur when the heart stops for about 10 seconds. In young children they are commonly reflexly precipitated by pain or other unpleasant stimuli,² and they may also be induced in certain children by fever as a genetic variety of febrile convulsions (to be published). What is of considerable interest is that similar seizures may occur in front of the television set for no other apparent reason. Four such cases are briefly described below.

A 9-year-old boy was referred as ? television epilepsy after a single, long, asymmetrical, clonic seizure which began while watching television. He was about to change schools in the following week and there had been two tragic deaths in his family in the immediate past. The electroencephalogram (EEG) with photic stimulation was normal on two occasions three months apart, but ocular compression in the supine position induced cardiac asystole of 10 s followed by EEG slowing.

A 3½-year-old boy while watching television tried to stand up, shaking all over, and collapsed on the floor. The EEG and the response to photic stimulation were normal, but ocular compression when supine induced asystole of 9.5 s with diffuse EEG slowing, deviation of his eyes, and a dazed expression.

A 14-year-old mentally handicapped boy, supposedly epileptic, had his worst-ever episode while watching television (a habit which was rare for him). He had some sort of warning, fell, his eyes went up into the back of his head with the whites showing, he was blue, stiff, and rigid, and then there was some jerking and he was briefly dazed. The EEG with photic stimulation was normal, but ocular compression induced asystole of 14 s followed by jerking of his lower limbs, cyanosis, and diffuse slowing of the EEG to 1½/s for 11 s. He responded to questions 8 s later.

A 9½-year-old girl had three episodes of unconsciousness in which she became limp with possible facial twitching, two of which occurred while watching television; she was referred as ? photosensitive epilepsy. The EEG with photic stimulation was normal, but ocular compression induced asystole of 7.7 s followed by 8 s of diffuse EEG slowing to 2½/s.

All four children had seizures in front of the television set but no EEG evidence of television epilepsy. On the other hand they had a highly abnormal oculocardiac response. More than 4 s asystole on ocular compression is regarded as abnormal, occurring in no

more than 1% of the population. Frank anoxic seizures following ocular compression in the supine position have been seen only in those subject to reflex anoxic seizures or syncope² and in a subgroup of those with febrile convulsions. The evidence presented here suggests that something in the act of television watching can induce a striking anoxic seizure easily mistaken for epilepsy unless ocular compression forms part of the EEG examination.

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¹ Stephenson, J B P, *British Medical Journal*, 1977, **2**, 45.

² Stephenson, J B P, *Archives of Disease in Childhood*, 1978, **53**, 193.

Factors affecting length of hospital stay

SIR,—I would refer to the letter of Mr H B J Chishick (29 April, p 1145) purporting to compare the costs of cataract surgery in different areas of Wales.

The data presented by Mr Chishick are inaccurate. The duration of stay for cataract operations in West Glamorgan in 1975 varied from 6 to 11 days, depending on the surgeon operating and the nature of the complications, and not, as stated 17.0 to 25.4 days.

Mr Chishick's estimation of the cost of cataract surgery using erroneous lengths of stay must therefore also be incorrect. The methodology adopted to arrive at the alleged cost per inpatient week is unusual. The stated base line is data obtained from a Welsh Office publication,¹ which give the cost per inpatient week average for Wales in acute non-teaching hospitals as £139. This figure is derived from an aggregation of all specialties in all hospitals of that category in Wales. Mr Chishick apparently has then divided this amount by 7, to arrive at an inpatient day cost of £19.86. He has then multiplied this figure by the length of stay extremes in his quoted print out figures, to conclude that the inpatient week cost is £155 in Gwynedd and £504 in West Glamorgan.

Hospital Activity Analysis has value in the management of the Health Service, but its credibility is reduced by letters such as that from Mr Chishick.

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¹ Welsh Office, *Health and Personal Social Services Statistics for Wales*, No. 3. Cardiff, HMSO, 1976.

* * * We sent a copy of this letter to Mr Chishick, whose reply is printed below.—
Ed, *BMJ*.

SIR,—The figures that I quoted referred not to the absolute but to the *mean* duration of stay for cataract surgery, which was 17.0 days for men and 25.4 days for women, and in fact these mean values represented a range of 6 to over 50 days. It was not my intention to make invidious comparisons between the area health authorities in Wales but merely to demonstrate that there was a wide variation in the length of stay for one type of elective surgery for which there is a low incidence of complications.

The cost of any operation, procedure, or