Letters To The Editor

Gallbladder nitric oxide

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TO THE EDITOR: In their recent paper, Cong et al. (1) argue that nitric oxide (NO) does not play a role in the relaxation of gallbladder muscle strips since a nitric oxide synthase inhibitor (NOSI) does not change gallbladder tonic contraction or block relaxation induced by electrical field stimulation (EFS). However, block of relaxation to EFS in strips from human gallbladder by a NOSI in vitro has been shown previously (6). This relaxation response has been controversial as it is small and is dependent on drug-induced tone level, and may be slow to develop and perhaps Cong et al. (1) have not been convinced that this response is physiological in nature.

More directly relevant, however, is the work of Luman et al. (4), who found that a NOSI increased tonic and phasic muscle contractions in human gallbladder strips in vitro, which suggests that NO is involved in regulation of tone (sustained resting tension) and spontaneous activity of the gallbladder muscle. The reference given by Cong et al. (1) does not address either of these issues and is unhelpful.

Little doubt now exists that NO-producing neurons are present in human gallbladder with labeling in nerve fibers distributed to the muscle layer (2) as in guinea pig gallbladder, where Mawe (5) has found all neurons to be cholinergic; he has proposed a number of theories to explain how opposing transmitter mechanisms in one neuron might operate. Evidence has now been presented that NO might play a regulatory role in cholinergic transmission in guinea pig gallbladder since the contraction to EFS is enhanced in presence of a NOSI (3). The role of NO in human gallbladder remains to be fully elucidated but in view of the findings of Luman et al. (4) it seems unwise to exclude a possible role in control of tonic contraction.

REFERENCES