

## Journal Watch

### Nocebo hyperalgesia: How Anxiety is turned into Pain

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**Reference:** L.Colloca and F.Benedetti  
Current opinion in Anaesthesiology; 2007, 20:435-439  
Review Article

#### ABSTRACT

**Purpose:**

Nocebo hyperalgesia is a phenomenon that is opposite to placebo analgesia and whereby expectation of pain increase plays a crucial role. In recent times, both the neuroanatomical and neurochemical bases of the nocebo effect and of nocebo-related effects have begun to be explored. The authors highlight recent advances in understanding of the neurobiology of the nocebo hyperalgesic effect.

**Methods:**

Review article

**Findings:**

A typical nocebo hyperalgesic response occurs following the administration of an inert substance which the subject believes to be a hyperalgesic agent (negative placebo or nocebo). It has been shown that the subject's negative expectations of pain worsening induce anticipatory anxiety about the impending pain increase and this triggers the activation of cholecystokinin that, in turn, facilitates pain transmission. Accordingly, cholecystokinin antagonists have been found to prevent this anxiety-induced hyperalgesia. Brain imaging studies have shown that the perceived intensity of a painful stimulus following negative expectations of pain increase is higher than in the absence of negative expectations and this is associated with changes in activation of specific brain regions.

**Conclusions;**

Since pain appears to be amplified by anxiety through the activation of cholecystokinergic systems, new therapeutic strategies, such as new cholecystokinin antagonists, can be envisaged whenever pain has an important anxiety component

**Strengths/Weaknesses:**

Not applicable

**Relevance to palliative care:**

Targeting anxiety and negative expectations about their pain ( anxiolytics. distraction therapy ) in terminally ill cancer patients could improve cancer patients' pain and quality of life