ABSTRACTS OF CURRENT LITERATURE

AUSTRALASIAN MEDICAL JOURNAL

Western Australia Coastal Shark Bites: A Risk Assessment

Western Australia (WA) recently enacted a controversial policy aimed at reducing the number of large sharks caught in the coastal waters off the southwest WA and Perth metropolitan coasts; however, there has been little published information regarding risk reduction strategies. The goal of the current study was to evaluate factors contributing to the cluster of shark bite fatalities and to estimate risks associated with recreational water activities off WA coasts. This observational study analyzed data from the Global Shark Attack File from 1974 to 2013 and included bites from large (>3 m) white sharks (*Carcharodon carcharias*). Measured factors included shark population growth, prey availability, water temperature, and water activity participation.

After reviewing 65 records from 1974 to 2013, it was found that the shark bites for coastal WA have grown more than 30% every 5 years for 40 years. There were 12 fatalities during this period, 10 of which were attributed to large white sharks. More than two thirds of the bites of large white sharks occurred in the winter or spring and correlated with increasing humpback whale migration into the coastal region of WA. Despite an overall increase in fatal and total reported shark bites in WA, the risk for on-shore bathers outside of Perth (the capital city of WA) has remained extremely low, especially when compared to daily recreational activities such as cycling. Higher risk activities included off-shore diving and surf sports in south/southwest WA coasts. The authors conclude that the risk of a large white shark bite will continue to rise as whale abundance increases off the WA coast; however, the risk for recreational beach visitors close to shore remains extremely low.

(*Australas Med J.* 2014;7:137–142). P Sprivulis.

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HAWAII JOURNAL OF MEDICINE AND PUBLIC HEALTH

The Relationship of Decongestant Use and Risk of Decompression Sickness: A Case-Control Study of Hawaiian Scuba Divers

Vasoconstriction underlies the pathophysiology of several well-established and suggested risk factors for decompression sickness (DCS) in divers, such as exposure to cold, dehydration, aging, hypertension, and nicotine use. Vasoconstriction is associated with

a greater degree of bubble formation during dive decompression and alters gas kinetics within the vasculature, potentially leading to a slower rate of off-gassing. Divers commonly use sympathomimetic decongestants for prophylaxis of barotrauma to the ears and sinuses before diving; however, these agents also cause vasoconstriction. This records-based, case-control study investigated the risk of using sympathomimetic decongestants and subsequent development of DCS.

In all, 400 cases were selected from among recreational divers evaluated or treated for DCS at the University of Hawaii'i John A. Burns School of Medicine between 1983 and 2010. Patients treated for DCS were compared with "controls" who did not exhibit signs or symptoms of DCS after diving. Decongestants, the independent variable, were defined as medications containing pseudoephedrine, phenylephrine, oxymetazoline, or xylometazoline and were used topically or orally. The investigators found a small, but statistically insignificant, positive risk for the development of DCS in divers using oral or topical decongestants within 12 hours of the incident dive (OR 1.4, 95% confidence interval: 0.8 to 2.6, $P = .22$).

Other known DCS risk factors were also analyzed in this study. Dehydration, repetitive diving, and violation of dive profiles had a statistically significant positive effect on the development of DCS. Limitations of the study include the potential for information bias due to poor historical documentation, not specifying decongestant dosage, and small sample size. The authors conclude that sympathomimetic decongestants did not increase the risk of DCS developing, whereas dehydration, repetitive diving, and dive profile violation contributed significantly to DCS.

(*Hawaii'i J Med Pub Health.* 2014;73:61–64). RW Smertz.

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JOURNAL OF SPORTS SCIENCE AND MEDICINE

Acute Impact of Inhaled Short Acting B₂-Agonists on 5 Km Running Performance

Salbutamol, a short-acting beta-agonist, is a bronchodilator that works by reversing airway smooth muscle bronchoconstriction. The World Anti-Doping Agency (WADA) guidelines allow athletes a maximum of 1600 µg inhaled salbutamol; however, there have been no conclusive studies evaluating how this dose affects exercise performance. The current study investigated the use of 1600 µg inhaled salbutamol and its effect on endurance running performance.