09.08.2022 | **Direct Healthcare Professional Communication**

Demexa Dexmedetomidine | Increased risk of mortality in intensive care unit (ICU) patients ≤65 years

Dear Healthcare Professional,

Boston Oncology Arabia, in agreement with the Saudi Food and Drug Authority (SFDA), would like to inform you about the risk of mortality in intensive care unit (ICU) patients ≤65 associated with use of dexmedetomidine.

Summary

- In 3904 ventilated critically ill adult intensive care unit (ICU) patients, the SPICE III trial compared the effect of dexmedetomidine sedation on all-cause mortality to the effect of "usual standard of care."
- When compared to other sedatives, dexmedetomidine was linked to a higher risk of 90-day mortality in patients ≤65 years (odds ratio 1.26; 95% credibility interval 1.02 to 1.56).
- The effect of age on mortality was most noticeable in patients hospitalized for reasons other than post-operative care, and it increased as APACHE II scores increased and age decreased. The mechanism is unknown.
- These findings should be weighed against the expected clinical benefit of dexmedetomidine compared to alternative sedatives in younger patients.
- The product information of dexmedetomidine containing products is being updated with a warning statement describing the evidence, and risk factors, for increased risk of mortality in ICU patients ≤65 years of age.

Background on the Safety Concern

Dexmedetomidine containing products are indicated for:

- Sedation of adult ICU (Intensive Care Unit) patients requiring a sedation level not deeper than arousal in response to verbal stimulation (corresponding to Richmond Agitation-Sedation Scale (RASS) 0 to -3).
- Sedation of non-intubated adult patients prior to and/or during diagnostic or surgical procedures requiring sedation, i.e. procedural/awake sedation.

The academia-sponsored SPICE III trial enrolled 4000 ICU patients needing mechanical ventilation, who were randomly allocated to receive sedation with either dexmedetomidine as primary sedative or with standard of care (propofol, midazolam). Although the target sedation range was light sedation (RASS -2 to +1), deeper sedation levels (RASS -4 and -5) were also allowed. The administration of dexmedetomidine was continued as clinically required for up to 28 days after randomization.[1]

Altogether, 3904 patients were included in an intention-to-treat analysis. Results are shown in Table 1 below. The study showed no difference in 90-day mortality overall between the dexmedetomidine and the usual care group (propofol, midazolam). The median age of patients included in the analysis was 63.7 years.[1]

In subsequent analyses, a heterogeneity of treatment effect of dexmedetomidine has been identified.[2] An increased risk of 90-day mortality (odds ratio 1.26 [95% CrI 1.02-1.56]) was observed among patients ≤ 65 years of age. While the mechanism is yet unclear, the heterogeneity of effect on mortality from age was most prominent in patients admitted for other reasons than post-operative care, and increased with increasing APACHE II scores and with decreasing age. Table 1: 90-days mortality Dexmedetomidine n/total (%) Usual care n/total (%) Total 566/1948 (29.1) 569/1956 (29.1) Subgroup per age ≤ median age 63.7 years 219/976 (22.4) 176/975 (18.1) > median age 63.7 years 347/972 (35.7) 393/981 (40.1) The product information of dexmedetomidine containing products is being updated with a warning statement describing increased risk of mortality in ICU patients ≤65 years of age.

TABLE 1: 90-DAYS MORTALITY

	Dexmedetomidine n/total (%)	Usual care n/total (%)
Total	**566/1948 (29.1)**	
	Subgroup per age	
≤ median age 63.7 years	219/976 (22.4)	219/976 (22.4)
> median age 63.7 years	347/972 (35.7)	393/981 (40.1)

Call for Reporting for Adverse Reactions

Reporting suspected adverse reactions is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the national reporting system.

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Sincerely,

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REFERENCES

[1] SHEHABI, Yahya, et al. Early sedation with dexmedetomidine in critically ill patients. New England Journal of Medicine, 2019, 380.26: 2506-2517.

[2] SHEHABI, Yahya, et al. Early sedation with dexmedetomidine in ventilated critically ill patients and heterogeneity of treatment effect in the SPICE III randomised controlled trial. Intensive care medicine, 2021, 47.4: 455-466.