Candidate No: _____

The Hong Kong College of Anaesthesiologists

Final Fellowship Examinations

Paper II – Critical Appraisal of Literature

12 August 2024 (Monday)

11:30 – 12:10 hours

Article
"BMJ Research: Local anaesthesia for pain control during outpatient hysteroscopy: systematic review and meta-analysis."
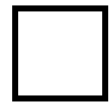
Instructions
- There are 8 multiple choice questions in this section, based on the above paper.
- **ANSWER ALL** questions, they carry equal marks.
- For each question, choose the **ONE** best answer and mark this on the answer sheet.
- If you mark more than one answer, you will receive NO mark for that question. No marks will be deducted for incorrect answers.

1. **In this meta-analysis, which of the following local anaesthetic technique(s) provided superior pain control compared with oral analgesics for women having diagnostic or operative hysteroscopy as outpatients?**
    I.   Intracervical injection.
    II. Paracervical injection.
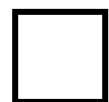   III. Transcervical injection.
    IV. Topical surface application.

    A. I only.
    B. II only.
    C. I and II only.
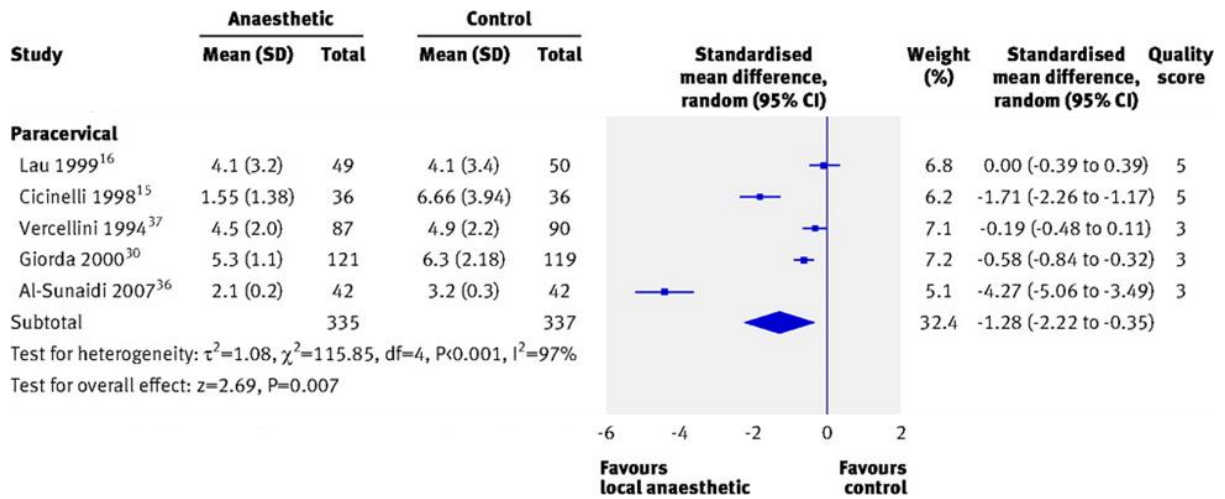   D. I, II and III only.
    E. All of the above.

2. **In this meta-analysis, when duplicate data were found in ≥ 2 publications, which of the following statement(s) is(are) true?**
    I.   the data were excluded from analysis.
    II. data in the original publication were used.
    III. publication with the larger series was used.
    IV. the senior author decided whether to keep the data or not.

    A. I only.
    B. IV only.
    C. I & II only.
    D. II & III only.
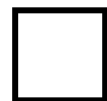   E. II, III & IV only.

The following three questions (Ques 3-5) refers to the following figure [Fig 4. Effect of local anaesthetic on pain during outpatient hysteroscopy, according to method of administration and quality of study. Figures are mean (SMD) pain scores – Please note only the part on "Paracervical subgroup" is shown here.
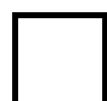
Study	Anaesthetic Mean (SD)	Total	Control Mean (SD)	Total	Standardised mean difference, random (95% CI)	Weight (%)	Standardised mean difference, random (95% CI)	Quality score
Paracervical								
Lau 1999[16]	4.1 (3.2)	49	4.1 (3.4)	50		6.8	0.00 (-0.39 to 0.39)	5
Cicinelli 1998[15]	1.55 (1.38)	36	6.66 (3.94)	36		6.2	-1.71 (-2.26 to -1.17)	5
Vercellini 1994[37]	4.5 (2.0)	87	4.9 (2.2)	90		7.1	-0.19 (-0.48 to 0.11)	3
Giorda 2000[30]	5.3 (1.1)	121	6.3 (2.18)	119		7.2	-0.58 (-0.84 to -0.32)	3
Al-Sunaidi 2007[36]	2.1 (0.2)	42	3.2 (0.3)	42		5.1	-4.27 (-5.06 to -3.49)	3
Subtotal		335		337		32.4	-1.28 (-2.22 to -0.35)	

Test for heterogeneity: $\tau^2=1.08$, $\chi^2=115.85$, df=4, P<0.001, $I^2=97\%$
Test for overall effect: z=2.69, P=0.007

-6 -4 -2 0 2

Favours local anaesthetic   **Favours control**

3. **With respect to the column on "standardised mean difference", which of the following statement is true?**
   A. For each trial, standardised mean difference was adjusted by the standard deviations of the mean difference.
   B. For each trial, the standardised mean difference was adjusted by the standard errors of the mean difference.
   C. Across the 5 trials, standardised mean difference was derived from measurement of pain using the same scale.
   D. A larger standardised mean difference indicates superior pain control with paracervical local anaesthetic compared with control.
   E. None of the above.

4. **With respect to the column on "Weight". Weight for each trial is:**
   A. directly proportional to the standardised mean difference.
   B. directly proportional to the standard deviations of mean difference.
   C. inversely proportional to the sample size.
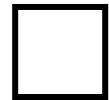   D. inversely proportional to the confidence intervals.
   E. None of the above.

5. **With respect to the heterogeneity statistics (bottom of the plot),**
   A. 97% of variation among the 5 included trials was due to heterogeneity.
   B. 3% of variation among the 5 included trials was accounted by trials with quality score <5.
   C. less than one-in-1,000 chance that the variation among the 5 included trials was due to heterogeneity.
   D. the magnitude of I^2 is inversely proportional to quality scores of the included trials.
   E. the χ^2 value was determined by the magnitude of pooled standardized mean difference.

6. **Low quality of assessment in the included trials was due to:**
   A. small sample size.
   B. high rate of loss to follow-up.
   C. no report of adverse event
   D. inadequate measure to ensure treatment blinding.
   E. inadequate report of distension medium during hysteroscopy.

7. **Publication bias in meta-analysis is best displayed by a**
   A. box plot.
   B. dot plot
   C. funnel plot.
   D. forest plot
   E. violin plot

8. **Random effect model was used to generate pooled results in this meta-analysis because:**
   A. data were generated from randomized controlled trials.
   B. heterogeneity was large among the included trials.
   C. weights were similar between the included trials.
   D. variation in treatment effects among the included trials were largely due to sampling errors.
   E. All of the above.

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----- End of Paper -----