Critical Appraisal (Form A)

- **What is Your Search question from the case history?**
  - How efficient is using insulin in the management of Diabetic Ketoacidosis (DKA) cases? Does it make a difference if you use different types of insulin?

- **Search questions related to the clinical case:**
  - **P = Population** 20 patients treated with subcutaneous insulin LISPRO were managed in regular medicine wards (n= 10) or an intermediate care unit (n= 10), while 20 patients treated with the intravenous protocol were managed in the Intensive Care Unit (ICU).
  - **I = Intervention (treatment or investigation)** Patients treated with subcutaneous LISPRO received an initial injection of 0.3 unit/kg followed by 0.1 unit/kg/h until correction of hyperglycemia, followed by 0.05-0.1 unit/kg until resolution of DKA.
  - **C = Control** those are patients with conventional management who were treated with intravenous regular insulin received as an initial bolus of 0.1 unit/kg followed by an infusion of 0.1 unit/kh/h until correction of hyperglycemia, then 0.05-0.1 unit/kg/h until resolution of DKA.
  - **O = Outcome or results** The duration of treatment until correction of hyperglycemia and resolution of ketoacidosis in patients treated with subcutaneous LISPRO was not different than in patients treated with intravenous regular insulin. There were no deaths in either groups and there were no differences in the length of hospital stay, amount of insulin until resolution of DKA or in the rate of hypoglycemia between treatment groups.

- **The title of article**
  - Efficacy of Subcutaneous Insulin Lispro versus Continuous Intravenous Regular Insulin for the Treatment of Patients with Diabetic Ketoacidosis.
- **Name of Journal :** American Journal of Medicine
- **Name of Authors :** G.Umpierrez, K.Latif, J.Stoever, R.Cuervo, L.Park, A.Friere and A.Kitabchi.
- **Year of Publication and Pages :** 2004, 6 pages.

- **What is the Research Question (PICO)?**
  - To compare the efficacy and safety of subcutaneous insulin LISPRO with that of a standard low-dose intravenous infusion protocol of regular insulin in patients with uncomplicated DKA.

- **Is the title of the paper appropriate and does it highlight the major theme of you PICO question?**
  - Yes

- **Is the abstract consistent with the body of the text (Objectives, Designs, Settings, Variables, Data Analysis, results and conclusion)?**
  - Yes

- **Objectives and Hypothesis : Are the objectives of the study clearly stated in the introduction and was it appropriate for the research design?**
  - Yes

- **What is the study design? (tick the proper design)**
  - Randomized Controlled trial.

- **What is the study population? How they were selected ?**
  - The sample comprised 40 patients with Diabetic Ketoacidosis (DKA) who were recruited from the Atlanta Medical Center and the Univeristy of Tennessee Health Science Center

- **Is the data collection open label or blinded for researcher ?**
  - Open label.

- **<u>Ethical Considerations</u>**
- **Were ethical considerations mentioned in the article?**
  - Yes

- **Are the results (data presentation in tables) clear?**
  - Yes

- **Discussion and Conclusion?**
- **Did the interpretations of the results and conclusion of the authors fit in with the results presented in the abstract ?**
  - Yes

- **Were the objectives of the study clearly accomplished and were they consistent with the discussion?**
  - Yes

- **How do the results apply to your clinical practice?**
  - Diabetic Ketoacidosis (DKA) is a medical emergency which you will face frequently in hospital. It is very serious and patients might die if you don't take actions immediately. Therefore, It is of significant importance that you learn how to manage such cases and what specific type of therapy if needed and effective.

- **Relevance of the paper**
- **Does the PICO research question of the study match PICO of your clinical question?**
  - Yes

- **Validity Assessment**
- **Were the patients randomized in the selection ?**
  - Yes

- **Was the randomization double or single blinded ?**
  - Single-blinded

- **Is the baseline characteristic (age, gender and other risk factors) were similar in the study and the control group of patients?**
  - Not mentioned?

- **Were patients in the groups treated equally aside from the experimental intervention?(in term of follow up and intention to treat analysis (every patients stay in his group as per randomization)**
  - Yes

- **Was follow-up completed as planned in the method in both groups?**
  - Yes

- **Were the results (outcomes) measured reliably and blindly?**
  - Yes

- **Applicability Assessment**
- **Is the study population relevant to my practice? (Can the results be applied to my patients?)**
  - Yes

- **Is the intervention relevant (available feasible and affordable) to my practice?**
  - Yes

- **Are all clinical relevant (important) outcomes considered?**
  - Yes

- **Are the likely benefits worth the potential harm and costs?**
  - Yes