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## A438

TITLE: EVALUATION OF INTRAOPERATIVE MONITORING OF PROTHROMBIN TIME (PT) AND ACTIVATED PARTIAL THROMBOPLASTIN TIME (APTT) WITH A NEW COMPACT MONITOR.

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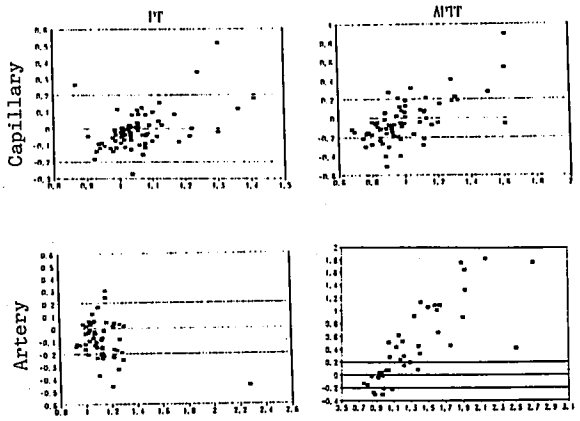
Intraoperative management of hemostasis is of major concern for the anesthesiologist. Nevertheless, results from APTT or PT tests as well as results from other tests are not immediately available. A prospective study has been conducted to compare Laboratory (Lab) methods and the CIBA Corning 512 monitor (512) which gives APTT and PT results within a few minutes after a drop of whole blood is applied.

One hundred and twenty five consecutive patients were included. Capillary samples (group 1 - n = 73) or radial artery samples (group 2 - n = 52) were collected from each patients. After several drops of blood were discarded, a drop of blood was applied in the disposable cartridge for PT or APTT and 4.5 ml of the remaining blood was dispensed into a tube containing sodium citrate. Laboratory tests were performed in two laboratories with a KC 10 ( ) using Biomerieux$^{R}$ thromboplastin (PT) and Organon Teknika$^{R}$ or Dade$^{R}$ reagents (APTT). Blood samples from group 1 were send to the one laboratory and blood samples from group 2 were send to the other one. Results are collected as following : ratio = patient time/reference time and are expressed as the difference between ratios (512 - Lab) versus the mean of the ratios (512 + Lab/2). Significant level was set a 0.05.




There is a significant difference (Chi-Square) between capillary sampling (PT : values out of acceptable range 6 %, APTT 31 %) and radial artery sampling (PT 28 %, APTT 73 %).Therefore, immediately available APTT and PT values after capillary sampling seem to be closed to classical laboratory methods despite a 20 % variability and provide an usefull information for the anesthesiologist.

## A439

TITLE: GROWTH OF STAPHYLOCOCCUS AUREUS IN FOUR INTRAVENOUS ANESTHETICS

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A report of the occurrence of systemic infections with *Staphylococcus Aureus* in patients after the use of propofol led us to compare the growth of this organism in propofol and three other intravenous anesthetics and saline.

A sample from a colony of *Staphylococcus Aureus* maintained by our microbiology department was diluted in non-bacteriostatic 0.9% saline to 0.5 McFarland units as determined by turbidimetry. The preparation was further diluted 1:50 in 0.9% saline and a 0.4 mL aliquot was mixed with 20 mL of each of the following anesthetics: 1) 2.5% thiopental, 2) 2% etomidate, 3) 1% propofol, 4) 1% methohexital, 5) 0.9% saline. A precision loop was used to plate 1 µL of each of the inoculated anesthetics onto blood agar plates at the following times after inoculation: 0, 2.5, 5.75, 8, and 30 hours. The plates were then incubated at 35°C for 24 hours and the number of colony forming units counted.

The number of colony forming units found are listed in Table 1. Significant growth of *Staphylococcus Aureus* was not noted by 30 hours after inoculation of the thiopental, etomidate, methohexital or saline. However, substantial growth of this microorganism was noted after 30 hours in propofol.

The Center for Disease Control has reported[1] that in hospitals in California and Michigan *Staphylococcus Aureus* bacteremia or wound infections were linked to the use of propofol delivered by an infusion pump by one anesthetist at each hospital. Cultures from unopened ampoules from the same lots were negative. A throat culture of the anesthetist in California was of the same phage type as that isolated from the patients' wounds. At the Michigan hospital, a review of the anesthetic procedures found that propofol remaining in an infusion pump at the end of one procedure was used for the next one. The occurrence of these infections led us to investigate whether propofol or three other commonly used intravenous anesthetics would serve as a growth medium for *Staphylococcus Aureus*.

Our results show that propofol was the only anesthetic tested which supported the growth of the *Staphylococcus Aureus* by 30 hours. This is consistent with a report of the rapid growth of *S. Aureus* in propofol within 24 hours at 33 C[1]. We suggest that ampoules of this anesthetic should be handled with scrupulous sterile technique and that once drawn up, it should be used for only one patient immediately and then discarded. Propofol should not be stored after opening and it should be used within a few hours at most.

Table 1. **Growth of *Staphylococcus Aureus* In Intravenous Anesthetics and Saline**
Colony Forming Units

| Solution: | Thio | Etom | Prop | Metho | Saline |
|---|---|---|---|---|---|
| Time (hrs) | | | | | |
| 0 | 67 | 62 | 38 | 78 | 88.5 |
| 2.5 | 40 | 0 | 32 | 32 | 78.5 |
| 5.75 | 29 | 0 | 37 | 11 | 139.5 |
| 8 | 11 | 0 | 36 | 2 | 54 |
| 30 | 0 | 0 | 500 | 0 | 78 |

Thio = Thiopental Etom = Etomidate
Prop = Propofol Metho = Methohexital

Reference:
1. Postsurgical infections associated with an extrinsically contaminated intravenous anesthetic agent-California, Illinois, Maine, and Michigan, 1990. MMWR 39:426-427, 433, 1990.