



Hidden sterilization cost of consignment orthopedic implants

Ortopedik konsinye implantların gizli kalmış sterilizasyon maaliyeti

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Dear Editor,

Metal implants are actual products that we intensively use in the practice of orthopedics and we rely on them in the majority of our surgical applications. We entitle them "actual" because they are constantly being updated in accordance with technological developments and they are usually packaged in more modern and more crowded containers as they are inherently components of a big market. As doctors, our biggest desire is to find the most suitable conditions for matching the patient and the implant that we will use, and also to apply the implant in a smooth process. Behind this pure desire there actually lies a very bustling and intense process. The process of delivery and sterilization of the material usually occurs behind the scenes. The positioning of the doctors, especially regarding the case of sterilization is very interesting. In terms of practice they are almost entirely out of the process, but in terms of responsibility they are at the heart of the process.

I suppose that majority of the doctors will agree that when the matter concerns sterilization in many ways nothing should be sacrificed and expenses should be negligible. However it is possibly arguable whether the doctors should give importance to the cost of this operation or not, and above all things having an idea of the cost would be very useful to us. But there is no accurate data or a current algorithm to calculate such cost. In a study published in 1979, Sandler and Altman^[1] calculated the cost of sterilization as 5.41 USD per hour. In another study conducted by O'Shaughnessy in 1993, the cost was calculated as 15.79 USD per cycle.^[2] However both studies are outdated.

Changing health policy in our country led our hospitals to make budget cuts in many areas. Indeed, savings in the field of health becomes a real problem which has to be taken seriously by many countries as with the developments in technology the costs of research and development (R&D) expenditures affects the products in the market. Accordingly, a study on the cost of sterilization has been initiated at our hospital; a spinal instrumentation set with five-plates and two containers is selected as the pilot set and sterilization cost of this set is calculated at the gas autoclave by the CSU and materials management session. As I have participated in this calculation process in person I would say that the most difficult stages are determining the variables and standardizing them. For this reason, we have followed a different method of data gathering and collected all the variables under two different groups. We called the first group the "time-dependent fixed cost". The expenditure components, which are included in this group, are building costs (heating, cooling, ventilation, rental, insurance), custody and replacement cost of the devices and staff costs. We called the second group the "cycle-dependent variable cost" and under this title we summed up all kinds of consumable chemicals, consumable supplies, personal protective costs, electricity and water consumption costs of washing and steam autoclaving materials. The total expenses at each of the four stages of sterilization (delivery and counting, decontamination and disinfection, packaging, and sterilization)^[3] were calculated and in these calculations it was assumed that one employee completes all sterilization processes. Referring to the data published at the website of the Ministry of Labor in January 2008 the monthly salary of an employee was calculated as 389 USD.^[4] As a result, the final cost was calculated as 25.67 USD. It should be taken into account that as this final cost includes many variables it is not possible

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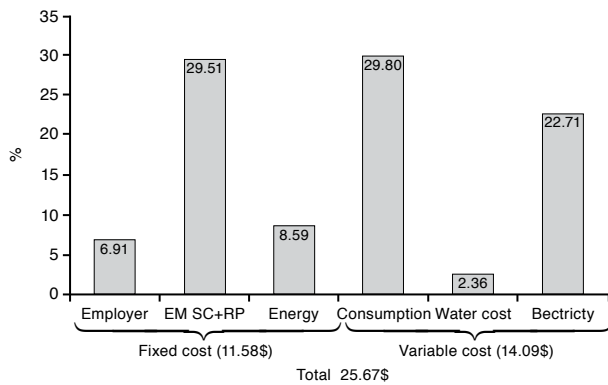


Figure 1. Proportional distribution of the total cost.

to generalize it internationally; it just gives a rough idea (Figure 1). For instance, in some countries the salary of an employee could be higher than the amount that we used in this calculation while in some other countries it could be less. Those who are interested in the formulation of this cost calculation can feel free to reach me via my contact address.

Here, the subject that I would especially like to emphasize is the excessive amount of the calculated cost. If we consider the sterilization cost of dozens of sets that are being used in daily practice, the total amount would increase. As I mentioned above I do not know exactly how much priority should be given to this cost since there are many issues that we should primarily address. But in my opinion it is necessary for us to have an idea about this cost and we should keep in mind that this cost is not negligible.

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