

from ETHICON, a 67% reduction in bleeding was observed with this technology.

Purpose The purpose of this work was to compare *in vitro* a classic suture and a HEMO-SEAL (HS) suture.

Material and methods We used two equivalent sutures: a classic and a HS suture of the same diameter (USP 5/0), with identical needle characteristics (tip geometry, curvature, length). First, we compared the two sutures with a binocular loupe. Then, we developed an experimental model to compare the bleeding with the two sutures. We created a circuit with water sent at a pressure of 90 mmHg into a vascular prosthesis in which we passed each suture model without making a knot. We collected the water that flowed from the holes in our suture through our prosthesis over 5 min. Then, we compared the weight of water collected with the two sutures. A sample size of $n=6$ was completed for each group. Results are expressed in terms of mean \pm standard deviation.

Results The two sutures both strictly look the same with the binocular loupe, except the region at the needle attachment of the HS suture, which had a smaller diameter. The average weight of the water collected was 28 g (± 5) and 8 g (± 1) for the classic suture and HS suture, respectively. We obtained a 71% reduction with the HS suture ($p < 0.05$). Despite this important difference, we identified biases such as: we did not use blood but water, pressure at 90 mmHg and we did not make a real knot.

Conclusion The HS suture really seems to reduce needle-hole bleeding. In order to get as close as possible to the *in vivo* conditions, it would be interesting to repeat tests with anastomoses performed by a surgeon. Furthermore, clinical impact of this reduction in bleeding remains to be assessed.

REFERENCES AND/OR ACKNOWLEDGEMENTS

<https://www.ncbi.nlm.nih.gov/pubmed/?term=needle+to+suture+rational%2C+as+well+as+suture+material#>

No conflict of interest.

11SG-033 INFLAMMATORY BOWEL DISEASE: BIOLOGICAL PRESCRIBING TRENDS IN AN ITALIAN HOSPITAL

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Background Inflammatory bowel disease (IBD) is a group of inflammatory conditions of the colon and small intestine. The major types of IBD are ulcerative colitis and Chron's disease. Symptoms can occur at any time and exacerbations can be followed by periods of remission. The objective of IBD treatment is induction, maintenance of remission or both. An increasing number of biologics have been approved for the treatment of refractory moderate to severe IBD in patients who have not responded to traditional therapy, but due to the absence of direct comparison data and the introduction of biosimilars, treatment choice is still controversial.

Purpose The aim of this study is to analyse prescribing trends of biologics used at the centre for the treatment of patients with moderate to severe IBD refractory to traditional therapy.

Material and methods Data were extracted from the management software used at the centre and collected in an Excel spreadsheet. Included data were: dispensing data of biologics

11SG-032 SURGICAL SUTURE TO REDUCE NEEDLE-HOLE LEAKAGE: COMPARISON OF TWO SUTURES

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Background Cardiac surgeons at our hospital asked the pharmacy for a new device to reduce bleeding during aortic suture. HEMO-SEAL (ETHICON) suture offers a decrease in the ratio of needle-to-suture diameters that would reduce needle-hole bleeding. This device is more expensive than an equivalent classic suture. According to the only study available

prescribed for every refractory moderate to severe patient with IBD treated at the centre between January 2014 and November 2017. For each patient dispensed treatments, switches and reason for switches were analysed.

Results Eight-hundred and fourteen patients with IBD treated with biologics were included: Adalimumab (42.7%), Infliximab (27.4% originator; 14.4% biosimilar), Golimumab (6.8%) and Vedolizumab (8.7%). Five per cent of overall in-treatment patients changed treatment. Switch rates were: 8.5% from Infliximab originator to Vedolizumab, 3.6% from Golimumab to Adalimumab, 1.8% from Golimumab to Infliximab biosimilar, 12.8% from Infliximab biosimilar to Vedolizumab, 2.8% from Vedolizumab to Infliximab biosimilar, 4.5% from Infliximab originator to Infliximab biosimilar and 1.7% from Infliximab biosimilar to originator. Reasons for switching were inefficacy (61%) or treatment cost reduction (39%).

Conclusion Analysis showed a high variability in biological therapy prescription trends at the centre, which could be related to patients' characteristics. Even in the absence of clear comparison data between different treatments, clinical choices included all biological treatments approved in Italy, which were almost always effective and were associated with a low overall switch rate.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

11SG-034

A CRITICAL LOOK AT ERRONEOUS INCENTIVES AND LACKING LEGAL FRAMEWORK AS DRIVERS OF MEDICINES SHORTAGES AND OBJECTORS TO PROBLEM-SOLVING APPROACHES

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Background Medicines shortages deteriorate. No prompt solution is foreseen. Interest vary between stakeholder values and patient outcomes. More analyses will not contribute substantially to relief. Distinct contributions to the solution of problems are urgently needed.

Purpose This work aims to report on the causes and solutions of medicines' shortages.

Material and methods Twenty-three lead stakeholders were interviewed. Erroneous incentives and/or system shortcomings and potential to improve shortages prevalence were evaluated. Applied methodologies comprise qualitative research, system dynamics-aided simulation and best hospital pharmacy practices.

Results One-hundred and thirteen relevant causes of medicines' shortages and 126 approaches to improvement were issued in mind-maps.

Governments' actions are limited to epidemiology and responsibility for public health. The State monopoly serves to fix reference pricing. However, free trade is not touched while macro-economy runs satisfyingly. Commodity exchange of starting materials might be a break-out option. Dogmata such as Public Health as cost booster need revision. In fact, added values arising from healed patients being reintegrated into work processes should be validated.

Manufacturers do not opt for business without free trade and guidance-independent decision making. Unmet gain perspective and break-even induce deregistration for economic reasons. Upcoming personalised medicine requests precision medicine, whereas large-scale production is transferred to low-income countries, although quality, reliability and capacity are undoubtedly inferior. The construction of new production plants have to anticipate two upcoming decades. Precious APIs and products could be sustained by transfer to intermediate scale manufacturers.

(Pre-) wholesalers carry burdens of capital bound for stock-keeping. Replenishing is not compensated. GPS-aided medicines spotting from source to consumer might help to overview and warrant steady flow.

In the past, hospital pharmacy manufacturing has been reduced for economic reasons. Vulnerabilities in the supply chain and of patient outcome were not considered. The revised truly inspiring Swiss Act on Medicinal Products requests more independence and ability of hospital pharmacies to produce formula hospitalis and magistralis.

Conclusion Some stakeholders still have the best (i.e. unrestricted gains) and the worst alternatives (i.e. loss of reputation, unmet break-even points, new legislation with shifting tasks and responsibilities to the State) to voluntarily negotiated agreements. Therefore, negotiations led by a referee board and a true private/public partnership might markedly improve the availability of medicines.

REFERENCES AND/OR ACKNOWLEDGEMENTS

SNSF/BFH/COST.

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11SG-035

URETERAL MAGNETIC CATHETER: AN EASY AND ECONOMICAL WAY TO REMOVE THE DEVICE

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Background During the urology device tender, a new ureteral catheter (UC) was proposed: the UROTECH's MAGNETIC BLACK-STAR kit, which is three times more expensive than the traditional UC (non-magnetic rigid polyurethane double loop UC). Its bladder side magnet allows its removal thanks to a magnetic recovery device. As this new technique is faster and requires no endoscope or re-sterilisable equipment, the additional cost of purchase would be offset during the withdrawal, and the discomfort would be reduced for the patient, according to the manufacturer.

Purpose We wanted to estimate the overall cost differences for our hospital between the BLACK-STAR UC and a traditional UC, and compare our results with an estimation made by the manufacturer to another hospital.

Material and methods The estimation is based on the time spent by the nurse and surgeon, and the exhaustive listing of the devices used during the removal procedure of the two UC, in men and women. The estimated costs of using re-sterilisable medical devices include depreciation and sterilisation. For the flexible endoscope, this was evaluated in 2015 in our hospital by also integrating the maintenance cost. As the placement technique is identical for both UC, the cost of the equipment used was not evaluated.