

unexpected because immersion in buffered neutral formalin, their technique, fixes full kidneys poorly. Similar limitations affect Randall's autopsy study, and all other studies that used autopsy material to determine morphological changes in the kidneys of stone formers.

Increased interstitial osteopontin need not connote cell injury. Osteopontin has multiple functions, including bone formation. Vascular calcifications in coronary disease and uremia share characteristics with embryonic bone formation and repair including osteopontin expression. Interstitial osteopontin in ICSF may be linked to osteoblast-like activity of the papillary interstitial cells, a hypothesis suggested since 1942.⁵

In contrast to brushite, cystine, and obesity bypass stone formers, ICSF, as we define them, have Randall's plaque and no evidence of cell injury.⁶

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Support vector machines versus artificial neural network: Who is the winner?

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To the Editor: The paper¹ shows a relevant comparison between support vector machines versus artificial neural network (ANN). We think that support vector machine is a very effective and promising method. Nevertheless, we think that a different ANN approach should be used. In our opinion, the authors should better explain what they mean by ANN. In fact, ANN is a wide family of different algorithms and methods. We could suppose that the ANN used in the work is a Multi-Layer-Perceptron with Backpropagation algorithm. In any case, stating 'support vector machine outperformed ANN' by testing only one kind of ANN seems not appropriate.

Besides, the authors say 'training and testing should be performed more than once and test set performances

averaged out, to reduce the variance of the performance estimate'.

It is well known that every training performed by an ANN is unique, owing to many intrinsic characteristics, as, for example, the randomly selected starting weights.² Every training has its own history and results. If we average out these results, changing the test-set each time, we find a medium value of a particular kind of ANN. It is a statistical measure of different things. It could be more interesting to train several ANNs, test them once, and take the best. There are many ways to understand whether the training and testing subsets have been chosen correctly. For example, a third subset of the database can be used as a validation set.³

We suggest that different ANN approaches and further tests should be carried out before asserting 'support vector machine outperformed ANN'.

1. Dal Moro F, Abate A, Lanckriet GRG *et al.* A novel approach for accurate prediction of spontaneous passage of ureteral stones: support vector machines. *Kidney Int* 2006; **69**: 157–160.
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Response to 'Support vector machines versus artificial neural network: Who is the winner?'

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We try to elucidate the issues raised in the Letter by Tonello¹ with the following points:

1. In Dal Moro *et al.*² we adhered to what is the widely most accepted structure for artificial neural network (ANN), the multi-layer, feed-forward ANN trained via the back-prop algorithm; the depth and width of the structure (number of layers and of nodes per layer), along with other parameters (thresholds and starting weights) were modified. It is known that such an ANN can interpolate even discontinuous functions hence its structure is quite general, especially for the considered problem.
2. As for the training method, we again adhered to a statistically sound technique: for each fixed combination of the above structure/parameters, we ran several simulations and performed proper averages; this is necessary because the training is non-deterministic, hence performing it once would yield statistically unreliable outputs, as strongly motivated in Dal Moro *et al.*²

- As for the testing procedure, we indeed used datasets non-overlapping with those upon which the training was run; this is necessary to avoid unwanted biases. Furthermore, as described in Dal Moro *et al.*² we chose a number of non-intersecting training/testing sets by properly ‘shuffling’ the whole data set, and took averages of the results, thus validating the model.
- The above canonical procedure has been performed also for the logistic regression and support vector machine algorithms, modulo the differences in structure, in the entity and number of parameters considered, and in the training scheme employed for the particular methodology. The collection of results are finally compared in Dal Moro *et al.*² Figure 1.

In conclusion, although we understand that for special problems the ANN may still yield reasonable results, we argue that in general (from a theoretical perspective) and in particular (for the considered case study) support vector machine indeed outperform ANN.

- Tonello L. Support vector machines versus artificial neural network: who is the winner? *Kidney Int* 2006 (in press).
- Dal Moro F, Abate A, Lanckriet GRG *et al.* A novel approach for accurate prediction of spontaneous passage of ureteral stones: support vector machines. *Kidney Int* 2006; **69**: 157–160.

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On *Kidney International* editorial Evidence-based politics of salt and blood pressure?

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To the Editor: Your editorial ‘Evidence-based politics of salt and blood pressure’¹ distorts both the scientific debate among leading experts and contains significant factual errors about the Salt Institute and our Data Quality Act challenge in *Salt Institute v. Leavitt*.

You accuse the Salt Institute of having ‘invent(ed) controversy’ on the question of whether the entire population should be advised to reduce dietary salt. The Cochrane Collaboration, the prestigious consortium of medical scientists who invented and defined the practice of ‘evidence-based medicine,’ rejects the evidence for a population intervention.² The current president of the International Society of Hypertension rejects a ‘one size fits all’ approach.³ The founder of the American Society of Hypertension, a *Time* magazine cover story subject for his seminal research, rejects the idea that evidence justifies universal salt reduction.⁴ In 1998, investigative reporter Gary Taubes won the national

prize from the National Association of Science Writers for his article in *Science* on ‘The (political) science of salt’⁵ chronicling National Heart, Lung and Blood Institute’s efforts to quell scientific dissent. We did not ‘invent’ this controversy among leading medical researchers.

You discuss our lawsuit, *Salt Institute v. Leavitt*, which we brought jointly with the US Chamber of Commerce, speculating disparagingly: ‘Their aim is probably to extract data on a few patients and show that these few did not respond to decreased salt intake with lowering blood pressure.’ Utter nonsense. Our petition⁶ sought correction of a statement by the National Heart, Lung and Blood Institute that the DASH-Sodium study proved that every American would benefit from lowering dietary salt. We simply sought basic statistics, no patient data. Most scientists would agree with us that the statistics we sought – blood pressure means and standard deviations – are necessary to interpret the findings, yet these have yet to be produced 5 years after the first report was published, despite a flood of other published articles, one admitting that there is no statistically significant association in six of the eight subgroups.⁷ As the government intended to use the study to support the Dietary Guidelines for Americans, the question is clearly important. The government should meet the same standards of scientific justification as private parties. And as we have seen in the Vioxx debacle, even the higher private sector standard may not be high enough.

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Editorial on the politics of salt and blood pressure

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To the Editor: The editorial on the politics of salt and blood pressure was exceptionally prescient in recognizing the influence of a trade lobby, the Salt Institute, on policies (*Kidney Int* 2006; **69**: 1707–1708). In one regard, though, the